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THE QUARTERLY JOURNAL

— OF —

INEBRIETY.

Published under the Auspices of The American Association for the Study and Cure of Inebriates.

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This Journal will not be responsible for the opinions of contributors, unless indorsed by the Association.

AN ADDRESS ON THE TWENTIETH ANNIVERSARY OF THE AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY,

Delivered before the Association, at a Meeting held in the New York Academy of Medicine, December 10, 1890.

BY LEWIS D. MASON, M.D.,

Consulting Physician to the Inebriates' Home, Fort Hamilton, L. I.

A meeting of the physicians, superintendents, and board of directors of Inebriate Asylums in the United States, was held in the parlors of the Y. M. C. A., New York city, Nov. 29, 1870, at 12 o'clock noon.

We have, therefore, just entered on the twentieth year of this organization.

At this meeting the following Inebriate Asylums were represented, in most instances, by their medical staff and delegates from their board of directors:

New York State Inebriate Asylum.— Willard Parker, M.D., president; D. G. Dodge, M.D., superintendent.

Inebriates' Home for Kings County.— Hon. J. S. T. Stranahan, president; Theodore L. Mason, M.D., consult-

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ing physician; Lewis D. Mason, M.D., attending physician; Rev. J. Willett, superintendent.

Washingtonian Home, Boston, Mass.— W. C. Lawrence, superintendent; Daniel Allen, R. K. Potter, Theodore Prentice, directors.

Washington Home, Chicago, Ill.— P. J. Wardner, M.D., superintendent.

Greenwood Institute, Massachusetts.— Albert Day, M.D., superintendent.

Pennsylvania Sanitarium, Media, Penn.— Joseph Parrish, M.D., president of the board.

In addition to the above representatives of asylums, there were present, C. L. Ives, M.D., Professor theory and practice of medicine, Yale College Medical School; Alonzo Calkins, M.D., author of "Opium and Opium Habit."

Thus six institutions were represented, having their location in the principal cities of this country, and the leading States, New York two asylums, Pennsylvania one, Massachusetts two, and Illinois one.

Dr. Willard Parker of New York was chairman of this meeting and Dr. Joseph Parrish of Pennsylvania secretary. A brief synopsis of the remarks of Dr. Parker may not be out of place, as they can best convey the object of the meeting and way in which the more intelligent professional mind of that day regarded this subject of inebriety.

On taking the chair, Dr. Parker made the following

ADDRESS.

Gentlemen: — The purpose of this meeting is the discussion of the subject of inebriety and its proper treatment.

It is not a *temperance* but a scientific gathering, made up of men having charge of the asylums and homes already established in the United States for the cure of the unfortunate victims of alcoholism.

In the beginning of the present century, insanity was regarded as a visitation of God's displeasure, and not as a

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disease, the subject of scientific investigation and amenable to treatment.

The important subject of inebriety is regarded now as was insanity some seventy years ago; the disease being considered irremediable, and its victims as forever doomed.

At the outset we are met by the inquiry:

I. What is alcohol?

The answer is — a poison. It is so regarded by the best writers and teachers on toxicology. I refer to Orfila, Christison, and the like, who class it with arsenic, corrosive sublimate, and prussic acid. Like these poisons, when introduced into the system, it is capable of destroying life.

II. The character of alcohol being established, we investigate its physiological and pathological action upon the living system. In larger doses it becomes a powerful irritant, producing madness, or a narcotic, producing coma and death.

III. It being settled that alcohol introduced into the system improperly induces a general disease in that system, as well marked as intermittent fever, small-pox, or lead poison, the question here rises, Can that disease be cured? The answer is affirmative. Inebriety can be cured, like other diseases, however, subject to relapses.

IV. It will be the object of this meeting to inquire into the best mode of treating inebriety.

1. Whether the city or country offer more advantages.

2. Whether large or small institutions accomplish most cures in proportion to the number of patients.

3. What legislation is needed.

We may inquire also into the advantage of supplementing the asylums with homes in our large cities.

Finally, it must be the steady aim of this body to impart scientific truth, and thus enlighten the mind of the public, inducing it to move in its power, and demand protection against a disease infinitely more destructive than cholera, yellow fever, small pox, or typhus, which are now so carefully quarantined.

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Eight essays were presented and read at the afternoon and evening sessions.

The principal essays were:

"The Pathological Influences of Alcohol and the Nature of Inebrietism." N. S. Davis, M.D.

"Philosophy of Intemperance." Joseph Parrish, M.D.

"Restraint as a Remedy for Inebriates." D. G. Dodge, M.D.

"Inebriate Asylums in their Relation to Social and Political Economy." Albert Day, M.D.

All the papers being worthy of mention and dealing with the subject from various standpoints.

The key-note that sounded the principal line that the association should follow was struck by Dr. Theodore L. Mason, "*that one great object* of this meeting should be to consider the question, what could be done to procure legislation that should recognize *inebriety as a disease*, as it does insanity, and make provision accordingly."

This principle was subsequently embodied in the plan of organization which was drawn up by the "committee on permanent organization" and presented in its report the following morning session.

Plan of organization, article three: after stating the name and conditions of membership, article three thus defines the *object* of the association:

"Its object shall be to study the disease of inebriety, to discuss its proper treatment, and endeavor to bring about a co-operative public sentiment and jurisprudence."

This article was embodied in the plan of organization as the working plan, and the center of life of the association, in regard to which all other objects were to be of secondary importance. The enunciation of this principle created no little disturbance in the outside world, and caused some defection even in our own membership.

The religious press was especially severe that we should characterize "a sin as a disease," and the columns of the

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religious papers were pointed at us like so many parks of artillery.

Even many of the medical profession shook their heads at our presumption, and in certain quarters we were regarded as at least slightly fanatic, and we were assailed on all sides. A certain Dr. Bucknill, a leading specialist in lunacy in England, after a short and most indifferent inspection of inebriate asylums in this country in 1878, returned to London and published a small brochure entitled "Habitual Drunkenness and Insane Drunkards;" most bitterly assailed all attempts to treat inebriety as a disease, and especially our association.

In endeavoring to do so, his anathema is as follows, p. 55, chapter III:

Habitual drunkenness — a vice — a crime — or a disease? He says:

A still more remarkable instance of the extreme position which has been taken on this question has been afforded in the proceedings of the "American Association for the Cure of Inebriates," Cure being italicized.

At the first meeting of this association a declaration was issued in which the dogma was solemnly propounded that "intemperance was a disease," and various papers were subsequently read by Dr. Parrish, the president, and others to explain and maintain this prime article of faith. He then referred to the withdrawal of a certain institution from representation in our society, because of their refusing to subscribe to the "Doctrine of Disease." The author then branches off into a sort of Fourth of July oration, quotes poetry, and concludes that America is not quite

> "The land where, girt by friends or foes,
> A man may speak the thing he knows."

But all effusions similar to this and all opposition simply advertised abroad and at home our position, did not annul or weaken it. The cry of the patriarch, "O that my enemy would write a book!" found a responsive echo in the hearts and minds of those who established the association and whose life work was to study "Inebriety as a Disease." If Dr.

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Bucknill and his coadjustors could look forth to-day on the neglected fields already white to the harvest, he would no longer see a few laborers, but an army of scientific men, coming up from all lands to occupy this new field of research.

The officers elected at this first meeting were:

For President, Willard Parker, M.D., of New York.

For Vice-Presidents, C. J. Hull of Chicago, Otis Clapp of Boston.

For Secretary, Joseph Parrish, M.D., Media, Pa.

For Treasurer, Theodore L. Mason, M.D., of Brooklyn.

The following preamble and declaration of principles were carefully considered and unanimously adopted:

WHEREAS, the "American Association for the Cure of Inebriates" having met and considered important essays on the various relations of inebriety to individuals, to society, and to law, and having seriously determined to use their influence in all suitable ways, to create a public sentiment and jurisprudence, which shall co-operate with true methods for the recovery of inebriates, do make the following declaration of their principles:

1. Intemperance is a disease.

2. It is curable in the same sense that other diseases are.

3. Its primary cause is a constitutional susceptibility to the alcoholic impression.

4. This constitutional tendency may be inherited or acquired.

5. Alcohol has its true place in the arts and sciences. It is valuable as a remedy, and, like other remedies, may be abused. In excessive quantity it is a poison, and always acts as such when it produces inebriety.

6. All methods hitherto employed having proved insufficient for the cure of inebriates, the establishment of asylums for such a purpose is the great demand of the age.

7. Every large city should have its local or temporary

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home for inebriates, and every State one or more asylums for the treatment and care of such persons.

8. The law should recognize intemperance as a disease, and provide other means for its management than fines, station-houses, and jails.

We have thus given in detail the principal features of the first meeting of this association. The declaration of its principles has neither been annulled, corrected, nor amplified; they now stand, as they then stood, nearly twenty years ago.

These principles were, a year later at the annual meeting, reiterated by the following resolutions offered by a special committee:

WHEREAS, It is the practice of many persons to denounce inebriety as a crime, and inebriates as sinners, and

WHEREAS, Such persons are reluctant to admit the fact that inebriety is a disease, lest such admission should seem to palliate the offense and relieve the inebriate of responsibility; therefore,

Resolved, As the expression of this association, that we are dealing with inebriety as a disease, without reference to the motive or want of motive in the inebriate himself.

Resolved, That the effect of poison on the blood and nervous system, and the reflex action of this morbific agent upon the whole physical structure is the same in the *virtuous* as in the *vicious*, and that antecedent or subsequent moral conditions are incidental to the main fact of disease.

Resolved, That any average percentage of public crime being accounted for by the fact of the confirmed inebriety of the criminal does not, in our opinion, increase the responsibility, nor should it add to the punishment of such offenders.

Resolved, That we have no controversy with the dogma of criminality as applied to the act of drunkenness, while we do not charge the inebriate with being a criminal.

WHEREAS, Intemperance is a fearful drain upon the productive interests of the community, which is increasing in magnitude every year, and

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WHEREAS, The measures hitherto adopted to suppress or even curtail this evil have been unavailing, therefore

Resolved, That in the opinion of this association it is the duty of legislatures, as a measure of State economy, to provide means for the erection and encouragement of hospitals for the detention and treatment of inebriates.

Thus this association spoke with no uncertain sound when it took its place and asserted its position before the tribunal of public opinion; no equivocation or retraction has escaped its lips since it commenced to speak on this subject; for nearly twenty years it has been consistent and faithful to its principles as already expressed. But the eyes of the Old World were looking upon this young and struggling association, and in about one year from the time it issued its proclamation and published its credo, a voice from England is heard, "Come over and help us."

Hon. Donald Dalrymple, Member of Parliament, author of a bill relating to habitual drunkards, and chairman of a committee of the British Parliament, intrusted with the question of establishing asylums for inebriates in England, sent to the "Business Committee" a series of questions to be answered by our association: Whether legal enactments should be passed controlling inebriates; whether the voluntary class should be also subject to legal enactments; whether inebriates should be treated in insane asylums.

The two former questions were answered in the affirmative, the latter in the negative. At the request of Dr. Dalrymple two delegates were appointed to visit England and give testimony before the special committee of the House of Commons, who were appointed to consider the best plan for the control and management of habitual drunkards. Dr. Joseph Parrish and Dr. D. G. Dodge were appointed such committee, and testified on the 3d, 7th, and 10th of May, 1872, before the special committee in London.

This committee contained names of world-wide celebrity, and we give the *personnel* of the committee, showing the character of those appointed to sit in judgment on this all-important subject:

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Dr. Donald Dalrymple, *Chairman;* Lord Claud Hamilton, Sir Harcourt Johnstone, Colonel Brise, Major Walker, Dr. Lyon Playfair, W. H. Gladstone, Messrs. Clare Read, Miller, Downing, Wharton, Birley, Akroyd, Henry Samuelson, Mitchell, Henry.

This committee commenced its work on February 29th and their final report was adopted June 13th. During this time sixteen sessions were held, seventy-nine witnesses examined, 3,299 questions propounded, embracing every topic within the range of the enquiry, from pathology of inebriation to the practical usefulness of prohibitory laws.

In addition to the American experts, the following Scotch and English physicians gave their testimony: Drs. Boyd, Crichton, Peddie, Nugent, Mitchell, Forbes, Winslow, Dalrymple, McGill, Christie, Druitt, the testimony filling a Blue Book of many hundred pages.

And what was the result of all this expense and time? In brief this: in establishing and accepting the fact that "Inebriety was a disease" — that the inebriate was an irresponsible agent — and in recommending proper legislative measures for his control, and also hospitals or asylums where he could be treated.

Was not this a triumph for our association? Small minds or misinformed persons might snarl and cavil, but the leading intelligence, both lay and professional, of the most intelligent nation on the face of the earth, endorsed and sustain us. Of course, occasionally even a great mind may be so strongly prejudiced as to go astray on some single topic as this, but in this case we have a banding together of the leading medical minds of our own and other nationalities who agree with marked unanimity in this matter; and it is also a fact, that as a new recruit joins our numbers from the ranks of medical science, we find him a peer among his fellows and of an advanced and mature mind, accustomed in all departments of knowledge with which he is conversant to sway and mold public opinion. Surely from such a "court of appeals" there ought not to be any appeal.

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But we do not propose to deliver an exhaustive historical sketch, time would not permit us; but as this is a sort of anniversary with us, and as we have taken shelter to-night, as it were, under the shield of this academy, so noble in its history, so liberal and advanced in its protection to all interests affecting medical science, we could not withhold showing our credentials, or *letters of marque*, so to speak, to testify we are not sailing under any false colors, and that this worthy institution contains no class of adventurers whose principles and practice may to-morrow pass into oblivion, but those who have fought and struggled for a principle for *many years* and at last have secured the respect of and a position in the medical world, and an influence both here and abroad, which grows stronger as time goes on.

To epitomize briefly, our position is as follows:

1. Beginning as an association November 29, 1870, we have held annual meetings since that date and occasionally special meetings.

2. We have published a quarterly journal during fifteen years of that period.

3. We have read and published as an association nearly two hundred papers bearing directly on the subject of "Alcoholic Inebriety."

4. Our testimony has stimulated inquiry and investigation all over the scientific world, and has influenced and secured the establishment of "inebriate asylums" and special legislation affecting inebriates here and elsewhere, and the organization of similar societies in England, France, Germany, and Sweden.

5. We have stimulated scientific research in this field of medicine by the proper award of prizes.

6. We have, by our special committee, advertised and exposed, by proper chemical analysis, many nostrums and proprietary medicines and so-called cures for the alcohol and opium habit.

7. The literature of inebriety has been greatly enhanced by the original observations of our membership, the subject-

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matter of whose essays would fill many volumes and have been of great value to those who desire to study the subject from the files of back numbers of "THE JOURNAL OF INEBRIETY," the organ of the association. From these essays passages have been freely quoted by writers in France, England, Germany, and Russia.

8. And finally, we have put on a definite basis, amidst much opposition, the only tangible and true method of dealing with inebriety, namely, as a disease.

We propose to follow out the same line in the future as in the past. We ask the medical profession to assist us in so doing that the mantle of Rush, Valentine Mott, Turner, Mason, Parker, and numerous other worthies who have passed away, may fall even on worthier shoulders than ours, when we, too, who have borne the heat and burden of the controversy have ceased to labor. May the legacy that shall then pass from us rest in the strong arms and confident courage of those who shall follow in our footsteps.

To further this end, the executive committee of the association have issued the following circular:

SCIENTIFIC STUDY OF INEBRIETY.

The American Association for the Study and Cure of Inebriety will hold a series of monthly meetings, in the hall of the New York Academy of Medicine, for the medical study of Alcohol and Opium Inebriety. Special phases of this subject will be discussed each evening in papers by leading authorities, followed by remarks and reports. The first meeting, December 10th, "The Relation of Life Insurance to Alcohol and Opium Inebriety," will be presented. January 7, 1891, "Alcohol: Its Physiological and Pathological Action, and its Use and Abuse in Medicine," will be discussed. "Inebriety, its Etiology and History," will be the topic for February 18th. "The Curability of Inebriety, its Treatment and Relation to Other Diseases," will be the subject for March 18th. In April, "The Medico-Legal Relations of Inebriety," will be studied.

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It is the purpose of this association to confine these discussions entirely to the medical and scientific side, with the view of reaching some general conclusions from which more accurate researches can be made.

A cordial invitation is extended to all medical and scientific students to be present and join in this special study of the "Drink Disease and its Problems."

By order of Committee,

T. D. CROTHERS, M.D., *Secretary,*
Hartford, Conn.

In view of all this, it is the hope of the association that physicians and those who desire to study from a medical standpoint alcoholic inebriety or opium, morphine or cocoaine, or chloral addiction, as well as the effect of all other drugs to which there is a possibility of becoming habituated by constant use, either as such addiction may affect the individual or the relation which society holds to the inebriate or to persons habituated to the use of any of the drugs as specified, may be induced to attend these meetings and identify themselves with our association either as active or associate members.

MORPHINOMANIA. — Urgent representations are being made to the French government to have put more stringently in force the decree which the Council of State ratified last May, making it penal for druggists to sell morphine to any one who is not provided with the signed prescription of a duly-qualified medical practitioner. Morphinomania is greatly increasing in France, as it is in Germany, England, and other European countries; though not, perhaps, to the extent that the same killing disorder is increasing in the United States. A calculation, based upon the medical reports, gives it out that there are 50,000 in France who dose themselves with morphine. In this case, in order to check the evil, a yet sterner decree is wanted. The druggist should be forbidden to sell it to any but doctors.— *Temperance Record.*

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ACQUIRED COLOR-BLINDNESS FROM THE ABUSE OF ALCOHOL AND TOBACCO.*

BY J. H. THOMPSON, M.D., KANSAS CITY, MO.,
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My purpose is to call your attention to a question, which as far as I am able to find out in general medical literature, has been scarcely mentioned. It is this: Under certain circumstances color blindness can be acquired when the power to distinguish red and green is lost, either temporarily or forever. The importance of such a statement is the excuse I offer for this thesis, which, under ordinary circumstances, could be of little interest. But, inasmuch as our responsibilities do not begin or end with our labors in the hospital, it is as much our duty to avoid accident as it is to care for the injured after a wreck which may have followed a false interpretation of signals. We all recognize how very important it is to the traveling public that in railroad and marine service every employe should be absolutely perfect in his color sense, so much so, that I doubt if one of us would trust life or limb on a night express train, if we thought for a moment that the man at the throttle was uncertain of the color of the lights used as signals. Thanks to the interest taken in this matter by corporation surgeons, a most careful examination is now made of all applicants for employment on railroads, and it is doubtful if any man with imperfect sight is ever now received. But we are in error if we believe that that examination, however searching, can alone guarantee absolute safety; for it is possible for a man accepted to lose completely, or in part, the power to recognize a pure green or a red signal at 100 yards on a clear night, and what

* Read before the Railway Surgeons' Association.

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makes it especially dangerous is, the individual may be unconscious of his defect.

It is true this is an uncommon experience, but inasmuch as total daltonism can be acquired, incomplete or partial color amblyopia may be acquired also, and affect a larger per cent. of men than is generally supposed. Indeed the amblyopia may be transitory, and escape the observation of the most observant. What can be the cause of this peculiar blindness? All competent authority is unanimous in attributing to the abuse of alcohol and tobacco, a certain remarkable derangement of the optical apparatus called the central color scrotoma, which is in a measure characteristic of alcohol poisoning.

Since the central scotoma is the diagnostic system, its description is necessary to an understanding of the subject. We mean by scotoma, a circumscribed blindness, total or incomplete, dependent upon some abnormal condition of the retina, which is recognized by the individual as a black or gray spot upon his field of vision. If the defect depends upon disease near the macula or center of vision it will be very annoying, for the blindness nears the point of fixation, or should the disease be limited to the macula itself, the eye for all close work would be practically destroyed. The scotoma, therefore, is an indication of interocular disease, and is a word rarely used to express partial blindness from central causes. The central scotoma of tobacco and alcohol amblyopia differ from the above in two remarkable instances, — 1st, it is a scotoma which involves the color sense principally; 2d, it is binocular and regular in its position, being placed between the optic nerve entrance and the macula lutea. The most noteworthy peculiarity of the central color scotoma is that over a certain area of the retina the sufferer is partially color blind, especially for green and red, it being impossible for him to correctly appreciate a pure green or red ray of light focused anywhere within the area of the scotoma, while if the same ray be directed to any other part of the visual field it can be seen and correctly defined. For-

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merly we were taught that the scotoma was situated between the optic disk and the macula lutea; that it was oval shaped, its long axis horizontal reaching from the nerve to the *fovea centralis*, and the short axis vertical. Beyond the fact that the scotoma involves that region of the retina, there is no certainty that its shape or extent are identical in all cases.

To Samelsohn of Cologne we are indebted for a very complete description of the color scotoma. According to that author the defect is not always oval, nor does its long axis invariably correspond to the horizontal diameter of the eye. If we make a careful examination of the special text-books we will find under the head of color blindness a description of the color scotoma, which, at best, is incomplete, since its relation to the center of vision is not definitely established. If, as is thought by many, the defect in the visual field is eccentric to the point of fixation, or that this point lies at the edge of the blind area, the subject could be of little interest to us, for, however well marked it might be, the individual would not be strictly color blind, for red and green signals could be distinctly seen. For a long time I have been persuaded that the color scotoma often involves the macula, since in many cases I have found that the blind area covered the exact center of the visual field. So when I find that Uhthoff, in a paper published in Graefe's *Archives of Ophthalmology*, and Samelsohn in the same journal, have by similar experiences arrived at the same conclusion, I am better prepared to say that the scotoma in tobacco and alcohol amblyopia often includes the *fovea centralis*, which makes the color blindness central and extremely dangerous. Having admitted the existence of the color scotoma, it is interesting to know the condition of sight, irrespective of the color sense.

According to the pathology of the disease it is evident that the central scotoma for green or red cannot exist with perfect sight for ordinary white light. I have never seen an example of this disease, but at the same time vision was very much affected, so much so, that most of the cases I have attended have come to me because of failing sight, when in an

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examination to discover the cause of the amblyopia I found that both alcohol and tobacco had been abused. If this were invariably the case, the subject would be of little interest to railroad surgeons, for common blindness would soon lead to discovery. Inasmuch, however, as the general amblyopia is not proportionate to the color blindness, it is instructive to know if good or fair vision is possible with defective color appreciation. In all the cases I have studied the blindness for green and red was total over a certain area of the visual field, yet, with slight enlargement of the text, reading was possible.

All things being equal, it is probable that in the early stage of the disease, an incomplete scotoma for red and green exists which may be the only apparent symptom long before the disease has reached a stage when sight for ordinary purposes is insufficient. *Therefore, it is possible for an engineer or brakeman to acquire a serious defect of vision and at the time be innocent of anything wrong.*

A very important point connected with the subject is the cause of the amblyopia and the pathological condition found in the nerves and retina. To Leber, Uhthoff, Samelsohn, and Hutchinson we are indebted for what we know of its pathology. According to these investigators we find in alcohol blindness marked changes in the optic nerves, chronic inflammation of the neurilemma and subsequent atrophy of the nerve fibres from compression. The most marked changes are seen in the center of the nerve in the bony canal through which it passes from the brain to the eye. In many of the cases examined the disease tissue was too pronounced to permit any doubt of the character; the parts were in a state of subacute inflammation, true chronic neuritis; so it is probable that the beginning of the alterations was localized congestion. In the examination made by Samelsohn, wherein the above conditions were discovered, the subjects were chronic topers, and in all of them the ante-mortem diagnosis, alcoholic amblyopia, had been recorded. It is very probable, therefore, that we are not mistaken if we attribute to alcohol the power

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to affect the circulation and nutrition of certain nerves, particularly the optic, which places the disease under the denomination acute neuritic. If in the beginning of the disease it is impossible to discover by the ophthalmoscope any interocular changes, it will not be long before alterations of structure will be apparent. So in advanced and hopeless cases we usually find evidences of atrophic disorganization of the interocular end of the nerves, due undoubtedly to destruction of certain bands of fibres above. It is evident that under such conditions the retina must suffer also, particularly that part supplied by the diseased fibres, which make up that part of the membrane external to the optic disk extending from the nerve entrance beyond the macula.

As above suggested, before such changes are apparent the individual is too blind to deceive himself or his acquaintances. It is in the beginning, during the formative stage, or period of neuritic congestion, when incomplete or transitory color amblyopia may be expected.

The relation between chronic alcoholism and disease of the connective tissue supporting nerve fibres, ganglion cells and the parenchyma of organs is well established. In some organs the irritation is kept up by the continued bathing of the parts with dilute alcoholic fluids, for instance, the liver, wherein we are acquainted with the different stages of the diseased processes, acute congestion, chronic congestion, interstitial inflammation, and finally cirrhosis. The same in the kidneys, which are undoubtedly irritated during the elimination from the system of the ingested alcohol and its irritating compounds. So, too, in nerve centers and commissures, which, if inflamed, are diseased because of the local effect of the poison and not the result of vaso-motor disturbances. Therefore it is not presumptive, if, in an endeavor to simplify the pathogenesis of bilateral optical neuritis, we say that alcohol can, by a purely local irritation, which it excites in the central commissure uniting the brain and eyes, cause a typical neuritis with its peculiar and remarkable symptoms.

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In the experience of the last few years it has become evident that alcohol alone was not in all cases the cause of acquired color blindness; that very often the abuse of tobacco had much to do with it. Therefore authorities to-day are not in accord regarding the position alcohol and tobacco hold in the pathogenesis. To those who insist that alcohol is the existing cause, the writings of Mackenzie, Trenchell, and Nettleship are in opposition, who, in the support of the tobacco theory, advance such strong arguments that some now doubt if alcohol has any part in the causation. Unfortunately, however, their experiences are purely clinical, and at no time, if I am not mistaken, have they based their opinions on pathological or microscopical demonstrations.

Edmonds does report the examination of the optic nerve in a case in which before death the diagnosis tobacco amblyopia had been made. Here the pathological condition of the nerve corresponded in some respects to the disease found in topers, but since he does not distinctly say whether the individual drank or not, it is impossible to eliminate alcohol as a cause.

Be that as it may, we cannot ignore the statement of some recent authorities who advance and support the tobacco theory. At the last meeting of the American Medical Association, Dr. Conner, of Detroit, presented a paper on tobacco amblyopia, wherein he reported several cases of undoubted tobacco blindness. The gentlemen referred to were W. E. Cant (Ophthalmic Hospital Reports, vol. ii, p. 71), Farnsworth (American *Medical Times*, October, 1862), Griffith (British Opthal. Society Reports, vol. vii, p. 83), J. J. Chisholm, of Balmore, and others. The most instructive case was narrated by Dr. Chisholm during the discussion. A lady 40 years old had visited him from a distance for treatment. Her bearing and language indicated a person of culture. She said that being aware that at about her age glasses would be needed, she applied to an optician for aid, in vain. Her distant as well as her near vision was befogged, and she was no longer able to read with ordinary comfort. After a very careful examination, ophthalmoscopically and

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physically, he had determined that he had to deal with a case of tobacco poisoning, but dared not make the accusation. He, however, stated that, were she a man, he could tell at once what the matter was, but in the case of a lady he was altogether at sea. She said at once, "Call me a man, and tell me what is the matter." He finally said, "You smoke too much." She laughingly acknowledged that she did smoke, having acquired the habit through the persuasion of her husband, who continually used tobacco. It would be instructive to know did she drink. Dr. Blitz also reported an interesting case of a woman 35 years old, who lived in the mountains of Tennessee. Her sight had been gradually failing for six weeks, but three days before he saw her she had become totally blind. He made a careful examination of the eyes, but could find no lesion to account for the amaurosis. He discovered accidentally that she habitually dipped snuff; she was denied her luxury, given strychnine and electricity, and recovered completely in four weeks—an undoubted case of tobacco poisoning which cannot in any sense be compared to the interesting cases of alcoholic amblyopia as reported by Uhthoff. At this time I desire to mention a peculiarity of tobacco amblyopia which merits attention. It is: there is a sympathy between diabetes and chronic nicotine poisoning.

Diabetes is at most a remarkable disease, and at no time during its course is the patient safe from strange and complicated disorders, especially of the nervous system. Quite a number of cases of tobacco amblyopia have been seen in diabetics, and, although no positive relation can be stated to exist between the two disorders, it is evident that the former disease predisposes the latter. May not the same relationship exist between chronic alcoholism and tobacco amblyopia? Some are strongly inclined to favor that idea, and, although I think that a pure and simple alcoholic blindness exists, yet I am forced by reading and experience to think that the excessive use of tobacco is more prone to affect the brain of topers than to disorder the special nerve centers of teetotalers, and *vice versa*. There can be no disputing the fact that

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nicotine has a marked influence on the vaso-motor centers, so that the conclusion is not forced if we state that alcohol can more readily excite those pathological conditions of the optic nerves above referred to, when, by the abuse of tobacco the normal tonicity of the capillary walls is destroyed.

Inasmuch as alcohol and tobacco are both poisons which can exert their deleterious influences on the nervous system, it does not follow that the use or abuse of either is responsible for all the ills man is heir to, or that chronic topers and inveterate smokers are blind; far from it. Amaurosis is only found in a very small per cent. of indulgers, and then by no means is the disease proof positive of the abuse of these agents. We may say that the color scotoma is an accidental phenomenon which, although it may follow the abuse of intoxicants, is not an indication of the amount of poison absorbed. We are taught by therapeutists that the equivalent to one ounce and a half of pure alcohol can be consumed by the system *per diem* without endangering the economy. This may in a measure be true, but, I take it, every observant physician knows that with some men alcohol, even in small quantities, acts more like a poison than a food. So there are many who cannot drink at all, as there are some who cannot smoke. Unfortunately but a very small per cent. of men have such finely-balanced nervous organizations that they are painfully aware of their incapacity to indulge in the two drugs; a great many are equally susceptible to the poisons, but derive pleasure from their ill effects; so it is among these we must seek the disease we are now considering. The inordinate drinkers are watched, but the steady half-full engineer, fireman, or operator is countenanced, for at no time is he too intoxicated to neglect his duties even in the slightest detail. It is amongst such drinkers we have found the alcoholic amblyopia; so it is in the rank and file of the steady drinkers we must search periodically for the color blind, remembering it is probable that in the beginning, during the congestive stage, the amblyopia is transitory, or too slight to be easily detected. Regarding the abuse of tobacco, pretty much the

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same may be said, but I cannot fairly discuss the status of nicotine amaurosis, for, as above remarked, we are uncertain of its pathology, even as we are of quinine blindness. I may say, I have never seen a case of tobacco scotoma. My experience has been limited to drinkers, and, although I have attributed the disease to the abuse of alcohol, yet all my patients were smokers, some excessive, others moderate. It is for this reason I have not been able to differentiate the diseases, but think that those who drink and smoke are more susceptible *than those who do either alone. When alcohol and tobacco are deleterious if used at all, they are abused.*

Regarding the diagnosis of intoxication amblyopia, it is hardly necessary to preface my remarks in an attempt to explain the theories of the sense of color, inasmuch as there are several, and no one can be said to explain the phenomenon without contradiction. We only wish to know is the subject color blind, and if so, is it congenital or acquired, and the cause. Many who are inexperienced in examining the sight may think it is always easy to detect color blindness, especially when the reds and greens are mixed. Not so; there may be great difficulty to decide, more particularly if the subject is aware of his failing. As a rule, however, alcoholic amblyopia is easily detected. According to the pathology of the disease, it is evident that complete daltonism cannot exist with unimpaired sight; so defective vision in hard drinkers is suspicious, when it is only necessary to test the sense of color with colored lights and variegated wools, and if the field of vision be examined by green and red objects, the scotoma can be localized. Such subjects are not the kind we especially seek; they are soon discovered; it is the apparently sound drinker we are after, whose eyes are healthy, with good vision, but with doubtful color sense.

To make the examination we use green and red lights, all colors and shades of wool and small colored objects, preferably colored disks painted or pasted on white card-board. I think the easiest and perhaps the most simple methods are as follows: 1st. Ask the individual to pick out of an assort-

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ment of colored wools all the greens and reds and their shades, both light and dark. It is not necessary for him to name the colors, but simply arrange them. One who is color-blind will mistake the greens and their compounds. Equally situated shades of green, pink, brown, orange, and red will so confuse him that a mistake is unavoidable. Although this test is simple it is very severe, and, if successfully passed, demonstrates good color-sight at the macula lutea.

2d. Take four cards—business cards—on which is painted or pasted in the center a colored disk, one blue, one red, one green, and one yellow. The disks should be about one-third inch square, or, if round, in diameter. The color must be pure, but not too intense. To examine the left eye close the right with a balled handkerchief, and place the patient in front of you about eighteen inches; then in the right hand hold one of the cards so that the disk is toward the individual, who, during the examination, should look the surgeon in the eye. In this manner explore the entire field of vision, and especially the color sense near the center of the field. If the scotoma exists, as it commonly does, between the macula lutea and the optic nerve entrance, the color on the card will be lost when the disk is immediately to the right of the visual line, if it be the left eye; *vice versa* if it be the right. Try in this way the four cards, alternating the green with the red, the blue, and yellow. With a little care and patience a color scotoma can be mapped out.

3d. In a large, dark room place a small lighted candle, twenty or more feet from the individual to be examined; give him an opera glass and, while he looks at the flame through the inverted glass, cover the light with different colored glasses, mixing in green and red. By using the opera glasses in this way we apparently throw the light afar off, making a candle flame at twenty feet simulate a lantern a quarter of a mile or more down the track at night.

There are other tests recommended by authorities, but they are very complicated, although exact. Of course to correctly map out a scotoma on the visual field instruments of precision

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are necessary. But inasmuch as we are only interested to know if an individual can recognize a common colored light or signal flag under all possible atmospheric conditions, mathematical accuracy is uncalled for. In suspicious cases we should be prepared to detect the central color scotoma, remembering that there is danger that direct sight will soon be involved if a well-defined defect neighbors the visual point. No man can tell by an opthalmoscopic examination that any unusual details are due to the abuse of alcohol or tobacco. The disk may be blurred, pale, or congested, and at the temporal edge show nerve atrophy. More can be surmised from a negative picture and a history of gradually increasing blindness in a hard drinker or smoker, than is possible from the most pronounced changes demonstrable with the ophthalmoscope. I have now in mind four recent cases of alcoholic amblyopia. The scotomate for green and red were well marked, wherein it was impossible to discover any disease about the optic nerve, or throughout the retina. Therefore, for our purposes the ophthalmoscope can only aid us by bringing to light those interocular diseases which cause poor sight, but which cannot possibly cause the scotoma for red or green.

It is evident that the prognosis and treatment of intoxication amblyopia depends on the pathological condition of the optic nerve and retina; therefore, whenever we find pronounced amaurosis, with or without objective symptoms, caused by the long abuse of alcohol, the chance for a permanent improvement in sight is very slight, since the nerve has undergone atrophic changes which cannot be removed by any treatment. If, however, we are so fortunate as to recognize the disease in the early stage, the total withdrawal of all alcoholic drinks, together with the administration of the iodide of potash, will cure the patient, but a favorable prognosis depends entirely upon the continuance of total abstinence. Strychnine in the early treatment is contradicted, but may be advantageously administered when we are confident that the acute interstitial neuritis is relieved. I have been unfortunate in my cases of alcoholic amblyopia, since I

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have not succeeded in getting my patients to quit drinking. They have all improved somewhat, but the color scotoma has remained a permanent defect. Those who have abused tobacco, but have used alcohol in moderate quantities, have improved very much under the internal administration of strychnine, with total abstinence; but however well they may afterwards see, I generally find that they are doubtful of the reds and greens. A disease once excited in an organ by any toxic agent, even if cured, will be very apt to return if the poison be again administered. Tobacco and intoxication amaurosis are good examples of this law; therefore, if an individual once suffers, he is extremely liable to have a relapse on the slightest provocation, and inasmuch as we know from experience that the drinking and smoking habits are very rarely permanently overcome, we cannot be in error or work a hardship when we advise that all employes of railroads, or at sea, who drink or use tobacco in excess, be critically, and from time to time, examined, especially for the sense of color, and if it is found that there is any reason to believe that the scotoma for red or green does or has existed, it is best to give our corporations the benefit of any doubt by striking all such suspects from the rolls.

A POOR woman in Glasgow, Scotland, exasperated beyond all measure at the continued drinking of her husband, deliberately broke his leg one day. He was forced to remain in the house for two months, and fully recovered, and was temperate ever after. This was a very effectual remedy, but not a practical one to recommend to others. Many of the extraordinary remedies urged for the cure of inebriates are equally absurd, and yet they are supported by histories of cases and by many good but unreasoning men.

EARLY delirium in pneumonia suggests a history of excessive use of spirits, according to De Costa.

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PATHOLOGICAL LESIONS OF CHRONIC ALCOHOLISM.*

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Alcohol has been a convenient scapegoat for many pathological lesions found in men who have been addicted to its use, and since to discuss the whole subject of "Lesions attributed to Chronic Alcoholism," would be to far exceed the time of such a paper as I am expected to read to-night, I shall confine myself to such lesions as are pretty generally conceded to be produced by the long-continued use of alcohol.

General Systemic Disturbance. — The system is profoundly affected by chronic alcoholism, a decided state of cachexia being developed, which is sometimes spoken of as the "alcoholic cachexia." The resistance of the system to diseases in general is diminished, and many diseases assume a much more virulent form in alcoholics than in other conditions. Probably the form of degeneration most generally produced by alcohol is a fatty metamorphosis The tendency to the formation and deposit of fat is so strong that even the blood is said to contain an abnormal amount of fat. The bloated, sleek, greasy appearance of alcoholics at this stage is too well known to need further comment, and we need only to remember that fatty deposits are being made in many of the most important viscera as well as in the subcutaneous tissue and omentum, to form a tolerably vivid impression of the condition of the organism at this time. This fatty condition may continue until death, and may hasten death by weakening some vital organ, as the heart; but if this is not the case, the tendency is for the fatty metamorphosis to be followed by sclerotic changes, or more rarely by parenchyma-

* Read at January meeting of the Association in New York City.

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tous inflammations. The blood becomes watery, and the number of red corpuscles diminish, thus producing anæmia. This is added to disturbances of digestion and circulation, and all combine to reduce the fat, and to give us the picture of the pale, flabby victim of intemperance, dull in intellect, shattered in constitution, and suffering from all the ills which such a dyscrasia is liable to produce.

In considering the pathological changes which alcohol produces in the different organs, we will, for the sake of system, take up each organ separately.

Stomach. — The stomach is the seat of many severe disorders produced by the abuse of alcohol, but there is no pathological lesion in this viscus which can be said to be characteristic of chronic alcoholism. More or less chronic gastric catarrh may be mentioned as the most common lesion, but even this is not found often enough to be called characteristic. A dilated stomach has been attributed to the effect of alcohol in beer-drinkers, but it is not improbable that the amount of beer, put into the stomach habitually, does more to cause dilatation mechanically by distension than by the action of its alcohol.

Intestines. — The small intestines are singularly free from pathological lesions from alcohol. The large intestines are often the seat of a chronic inflammation marked after death by dilated vessels, and areas of hyperplastic thickening in the mucous membrane and submucosa. Pathological changes in the liver, by impeding portal circulation, doubtless have much to do with producing these changes. The solitary glands of the large intestine are not uncommonly enlarged.

Liver. — The liver is quite commonly the seat of pathological changes in chronic alcoholics. The fact that the alcohol goes directly from the stomach and intestines to the liver, has been generally accepted as an explanation of this fact. The first change produced in the liver is congestion ; this is followed by fatty infiltration, or by hepatitis, or by both. Both varieties of hepatitis are found, viz. : parenchymatous inflammation, and sclerosis. The latter is more common. While sclerosis of the liver is a common lesion of alcoholics,

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I think the general impression of its frequency gives it too great importance. My attention was first called to this by Dr. Formad, while I was associated with him as a colleague, at the University of Pennsylvania, and what observations I have made since that time have borne out his idea. This opinion is also indorsed by Dr J. C. Wilson, president of the Pathological Society of Philadelphia. Of fatty changes, which are probably the most common lesions of the liver in alcoholics, the form most frequently met with is simple fatty infiltration, although the genuine fatty degeneration in which the protoplasm of the cell breaks down into fat is also described as occurring.

Spleen. — There are no characteristic lesions in the spleen of alcoholics.

Lungs. — The lungs are very often found in a state of hypostatic congestion in cases of death of old alcoholics, after a spree. This, however, can hardly be called a lesion of chronic alcoholism. Fibroid phthisis has often been ascribed to the use of alcohol as a predisposing cause. There is no doubt that many cases of this disease occur in alcoholics, but these cases are often found in knife grinders, coal miners, and others whose daily work subjects them to conditions which are known to produce interstitial inflammation in the lung.

These men are often hard drinkers, but the disease occurs in those who are not intemperate as well as in those who drink to excess. A carefully prepared table of the number of cases of so called "fibroid phthisis" occurring in men engaged in occupations subjecting them to the inhalation of fine sharp particles of iron, coal, etc., giving the relative number of cases in which alcohol was used to excess to those where the man was temperate, would be very interesting.

The long continued use of alcohol produces a tendency to hyperæmia and interstitial inflammation which leads to fibroid changes. This is true of the lungs as well as elsewhere, and alcohol may not be without influence in producing a tendency to fibroid phthisis rather than the more acute forms of the dis-

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ease, but our knowledge of this subject at present hardly warrants us in making a positive assertion.

Heart. — The lesions of the heart may be given as obesity of the heart, fatty degeneration, chronic myocarditis, and hypertrophy.

In obesity of the heart the fat is deposited all over the heart in yellowish masses, and is also found between the muscle bundles. In fatty degeneration the muscle fibres themselves break down into fat. In chronic myocarditis we have a process of sclerosis, or what is often called fibroid degeneration. The heart muscle is often seen alternating with bands of fibrous tissue, which gives us a streaked appearance. Hypertrophy of the heart has been ascribed to chronic alcoholism, but on this point there is a difference of opinion. Fatty hearts and fibroid hearts are very much weakened and often cause death by failure.

Blood Vessels. — Alcohol produces a dilatation of the capillaries, and a tendency to extravasations of blood. In this the impoverished condition of the blood probably plays a part also. In the larger vessels, alcohol lowers the tone of the unstriped muscle and produces a tendency to atheroma.

Kidney. — Bright was of the opinion that a large number of cases of the disease which bears his name was due to the abuse of alcohol, and, I suppose, that accounts for the firm hold which this idea has on the profession. Certainly pathological examination will not bear this out. Fatty infiltration and fatty degeneration are *par excellence* the renal lesion of chronic alcoholism. The kidney, in these cases, has a more or less characteristic shape, which Formad has, not inappropriately, called "big-back."

Brain. — The greatest effect of alcohol, functionally, is on the nervous system, and different changes have been described as occurring in the brain of chronic alcoholics, but no constant lesion, gross or microscopic, has yet been demonstrated to be characteristic. The meninges are usually the seat of hyperæmia, and the outpouring of fibrinous lymph. Pachymeningitis hæmorrhagica interna is also found in these

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cases. The bad condition of the blood, arteries, and capillaries favor the exudation of serum, and we not infrequently have a large effusion such as to exert considerable pressure on the brain.

Spinal Cord. — The same may be said of the spinal cord as of the brain. There is great functional disturbance but no pathological lesion yet shown to account for it. The meninges are involved just as in the brain.

Peripheral Nerves. — Degeneration of the peripheral nerves has been described by several observers, who have made special examination on this point in chronic alcoholics.

Before closing, I wish to say a word as to the importance of making more careful investigations on this question. There has been a great deal of statistical evidence gathered which is untrustworthy because we do not know the history of the patient. Many cases of Bright's disease have been reported, which were complicated with histories of severe cold, exposure, and other causes, which would be more apt to account for the kidney trouble than the alcohol. These had to be excluded by taking cases where such complications did not enter, and observing that, in these, alcoholism failed to produce morbus Brightii. Another set of observation we greatly need, is on well-to-do patients, who have not been exposed to all sorts or inclemencies of weather, mal hygiene, etc., and to determine the difference in effect of different liquors, and even the same liquor of different grades.

That the action of common liquors, which contain higher alcohols than the ordinary (ethyl) alcohol, is more harmful than that of purer liquors or of pure alcohol, has often been noticed. Dujardin-Beaumetz has made some interesting experiments on animals to show this. The animals chosen were pigs, because their food and digestion, more than that of any other animal, resembles that of man. He found that with ordinary (ethyl) alcohol, any considerable interstitial hepatitis, thickening of the stomach wall or ascites, was absent, even after two and one-half years of alcoholism.

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With the higher alcohols congestion of the stomach and of the liver were produced, in a marked degree, and in a very short time.

In some experiments which I saw made by Prof. Martin, at the Johns Hopkins University, the effect of the different alcohols was very strikingly shown. The action of these alcohols was tested on the mammalian heart, isolated according to Prof. Martin's method, and separated from the influence of the nervous system, except its own intrinsic ganglia. One of these alcohols, which is sometimes found in liquors, was so deadly in its influence as to paralyze the heart when present in such small proportion as one drop to several pints of blood. Of course we do not get one drop of these higher alchols in one or two glasses even of common liquor, but there is abundant evidence of the damage they do even in the minute proportion in which they occur. After all, we are to look to neuroses rather than to pathological lesions for more valuable working data for those interested in the study of inebriety. Many of our most dangerous mental diseases have no pathological lesion by which they can be recognized, and yet the clinical signs are most striking.

If by careful study we can show that the lesions of alcohol are functional diseases of the nervous system, rather than those marked by any anatomical change, we place them, I think, much nearer where they belongs.

Dr. Weeks remarked on the "Prize Essay" as discussed by Dr. Kemp, and this paper as follows:

The statement that the form of neuritis met with in chronic alcoholics is not peculiar to this condition, corresponds to the conclusions arrived at by other observers. He has dwelt at length on the changes produced in the nerve fibres themselves, but has not emphazied the marked influence in the production of scelerosis or hyperplasia of connective tissue so frequently noticed in the nerve trunks and in other tissues affected by the long-continued use of alcohol. As an oculist, I am naturally most interested in the effects of alco-

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holism on the nerve trunks passing to the eye and its appendages. It seldom happens that neuritis, due to alcoholism, is observed in affections of the eye muscles. Transient paresis of the accommodation and of the extrinsic eye muscles due to the direct toxic effect of alcohol, shortly after its ingestion, is common, but permanent effects are rarely seen. Interstitial neuritis, however, not infrequently affects the optic nerve. It is known under the name of post-bulbar neuritis, due to alcohol, and manifests itself subjectively by the production of a central scotoma, in the field of vision, complete for red and green in its early stage, showing impairment in the function of the tempero-macular nerve fibres. This gradually deepens to a central scotoma for all colors and an extension to all parts of the field, resulting in complete blindness if the use of alcohol is not discontinued. Objectively, the first indication of any effect on the nerve is usually a paling of the optic disc in its outer lower quadrant. The study of the changes taking place in the optic nerve, due to alcohol, has been carefully carried out by Uhthoff of Berlin, who examined many hundreds of insane patients at the Charité. Of these patients quite a number were chronic alcoholics, some of whom presented the peculiar form of neuritis of the optic nerve. Three of these last came to section. Uhthoff found that the lesion consisted in an interstitial neuritis, the peripherical part of the nerve to the temporal side being the first affected. The process was one of sclerosis, connective tissue taking the place of the nerve fibres; the size of the nerve was slightly reduced. The varicose changes in the nerve fibres and in the axis cylinders, as mentioned by Dr. Kemp, were observed, but the chief agent in the production of the loss of function was the increase in connective tissue, its subsequent contraction producing strangulation of the nerve fibres.

If, as the remarks made by Dr. Kemp lead us to infer, the change in the nerves, due to the influence of alcohol, first begins in a degeneration of the nerve fibres themselves, it is hard to account for the subsequent recovery of

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function in those cases where it is already partly abolished. It is found, that in cases where we have a central scotoma, with vision reduced to $\frac{20}{200}$, total abstinence from the use of alcohol, in connection with a regulation of the diet, will bring about partial or complete restoration of vision. The following is an illustrative case:

R. S., an artist, age 40 years. Has been a moderate drinker for years. He was first seen on May 7, 1888. The history was that of a gradual failure in vision, extending over a period of some months. Lt. Pr. vision in the left eye equaled $\frac{20}{100}$; right eye, $\frac{20}{200}$. Complete central scotoma for red and green. Ophthalmoscopic examination showed a paleness of the optic disc in the outer lower quadrant. Diagnosis, interstitial neuritis of the optic nerve from the effects of alcohol. Treatment, abstinence from alcoholic drinks and small doses of the iodide of potash. On July 1, 1888, the vision equaled $\frac{20}{20}$ in both eyes. About one year later the vision was $\frac{20}{20}$ full in both eyes. Paleness of the outer lower portion of the disc still remained.

It has been my fortune to see cases of neuritis of nerve trunks other than the optic nerve where abstinence from alcohol did not result in recovery from the paresis. Is it possible that the change in these nerve trunks is of a different character?

THE official report of crime in France for 1887 shows that inebriety has diminished steadily from 1873. The average number of inebriates arrested for crime of all kinds from 1873 to 1875 was over eight thousand. From 1875 to 1880 it was seven thousand five hundred. From 1881 to 1885 it was six thousand seven hundred. From 1885 to 1887 it was five thousand nine hundred.

THERE were confined in English prisons and workhouses December 1, 1890, 241,877 persons, who came there directly or indirectly from excessive use of spirits.—*Canon Gloister's address.*

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ACTION OF ALCOHOL ON THE THROAT.

By Dr. G. B. Hope,
Surgeon of Metropolitan Throat Hospital, New York City.

In presenting the short paper, which I have the honor of reading before your society this evening, I am disposed to offer an excuse for the narrowness of the special topic as affecting so limited an area as the throat, simply. But when considered from a broader standpoint, the subject matter, "Alcohol, its physiological and pathological action, and its action and abuse in medicine," finds perhaps here a particular material, not alone in rounding out the effects and results of a general physical character, with its central degenerative changes, but it places on record a breathing, speaking testimony as to forms of catarrh which are unmistakable in their causation, important in their issue, and often irremediable in their treatment. No scalpel is necessary in following the line of the disease, or the microscope in determining the finer order of tissue degeneration. We have clearly under the eye certain characteristics of color, form, and action which point as absolutely to alcohol abuse as if the letters were stamped by the congested vessels on the thickened and relaxed mucus membranes.

Although, as times are, laryngology has passed to a full stage of development, and the corps of its followers has easily attained the point to which a generous rivalry of procedure reaches out to new formulas of treatment and new ideas of the development of disease, it seems strange that so little has been added in this direction to a literature that deals so exhaustively, in all other regards, with all the ills our flesh is heir to.

Such mono-theorists, who are disposed to find in the doctrine of hereditary syphilis the starting point of every catarrhal action, appear to lose sight of the very fact of the general

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law that underlies their first principle and dominates peculiarly in the alcoholic constitution: if nature, following out her plan of natural selection, imprints the outward resemblances in the arrangement of pigment and cell, and so presents a reproduction of that from which it took its life, there is no cause for wonder if the materials in their elements should bear a like resemblance. The vigor of the cell presupposes the vigor of the elements of which it forms a part, and on which, in later days, we feed our strength. Is its source rich and pure, so will the developing tissue take to itself a more perfect outline and a more enduring structure. It is not contended that alcohol alone is the feature, approximate or remote, of the multitude of chronic affections that afflict the functional uses of the respiratory and phonatory organs, but only to recognize in it an unmistakable and frequent cause, and, as such, deserving to hold a high place in the list of pronounced causation, as well as affording the hereditary disposition to arouse to activity and laryngeal pulmonary diseases that might otherwise have long lain dormant.

The functions of the upper air passages relate to those of respiration, phonation, the sense of taste and smell curiously commingled — all disposed to temporary disturbances of ready causation. Throughout, a surface of continuous mucus membrane, with its delicate epithelium, furnished so abundantly with vascular, glandular, and nerve supply, as if intended to serve as the uncompromising guardian to the inner man against the approach of all improper foods and noxious vapors. If sometimes lenient to the abuse of the master, it yet surely undergoes structural changes which culminate in the development of a fixed and progressive disorder, including more or less of the normal functional activity of the parts involved. The mucus membrane of the mouth and fauces has been compared to one large tract of thirsty sand, ready to absorb, by means of the free distribution of the lymphoidal follicles, fluid and solid particles alike. Here comes into play the direct action of concentrated stimulants, both as the result of contact as well as by continuity of tissue in

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gastric irritation, in the formation of catarrh — the κατα-ῥεω — that relates incidently to alterations of secretion, but also, in the career of the series of histological changes that are undergone, to passive congestion, infiltration, and fibrous thickening. The toxic effect of alcohol on the vaso-motor system also bears its contribution in heightening the disposition to vascular engorgement. The flushed face and the rubicund nose have, from time immemorial, been the accepted signal of intemperance, and the dread of its votaries.

We have consequently in the mucus membrane a soil peculiarly adapted to the exhibition of the various features of nutritive organization, on the rational adjustment of which depend so many of the special senses which are accessory to these parts. The familiar instances of diminished hearing following alcoholic abuse, are features of well-established observation; the senses of taste and smell progressively demand increased stimulation in order to excite an appreciation of sapid or odorous particles; the voice is changed, and even respiration may become embarrassed.

The disposition to adventitious diseases is notably increased, partially on account of mechanical obstruction to normal respiration, as from intrinsic loss of tissue resistance. Sore throat, so-called colds, passive pneumonia, glandular disturbances and ulcerative lesions are ever present menaces which belong to the servant of the alcohol habit. Moreover, it may be claimed that chronic bronchitis is an almost invariable accompaniment to the vanities of the drunkard's cup.

Hospital histories of pulmonary phthisis abound with cases in which inebriety forms a distinguishing nucleus in the departure of the formative period of the disease, and Dr. Edward Smith testifies that among a thousand such patients examined twenty-four per cent. were classed as free drinkers.

The consideration of the elements affecting the use and preservation of the voice, possesses a living interest to a large class of professional speakers and vocalists, among whom many have been led astray by popular fallacies, or by the in-

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judicious advice of medical practitioners, who are readily disposed to find in alcohol a vocal tonic of immediate service, and too often meeting with the personal agreement of their patients. The common failing of human nature is to accept without question the time-honored maxims that concern the familiar habits of living, and in some way to turn them into arguments to excuse whatever excess a generous interpretation may have provoked. In this manner, no doubt, the recurring association of song with wine has done much to pave the way to a belief that a moderate alcoholic stimulation is disposed to strengthen the voice and add a lustre of tone to the natural quality. Particularly is such treatment recommended where great exertion, or where fatigue or exposure has temporarily produced a superficial catarrhal disturbance.

It is strongly insisted that even the emergency employment of alcohol is to be regarded in the light of an *excitant*, and not a *tonic*, of muscular contraction, and, in this sense, provoking a speedy reaction with increased vascular engorgement. Certainly, we are not to ignore the frank assertion that comes from the practical experience of vocalists of established reputation, who are best able to judge from the subjective standpoint, that the reliance upon alcoholic stimulants is the beginning of the downward road, broad, and easy, that leads the more swiftly to decay.

Such, then, is a free-hand sketch, reproducing in a degree the results of established clinical details, which, however varied, present the same foundation element of infection.

"Every inordinate cup is unblessed, and the ingredient is a devil."

JUDGE SALMON P. CHASE, while Governor of Ohio in 1857, strongly urged the Legislature to make an appropriation for a State inebriate asylum. He was the first Governor who called attention to this subject in this country.

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ACTION OF ALCOHOL ON THE RED BLOOD DISC IN LIVING MAN.

By Ephraim Cutter, M.D., LL.D, of New York.

In order to properly understand the subject, a brief description of the inspection of the normal red and white blood corpuscles will be given, and this compared with the blood of a drunkard after drinking one and a half pints of whisky in the course of an hour.

In Healthy Blood.

The red discs appear biconcave, with edges well rounded out, clear, distinct, and well defined. Their color is a deep lustrous ruby red, appreciable only by actual observation. Their size varies in the same individual whence taken, average $\frac{1}{3164}$ inch in diameter. Their number in the field varies with the mode of manipulation. If the drop of blood is large for the cover they will be numerous, if small, they will be fewer. In this estimate of number, care should be taken to have the films of blood composed of the same thickness and equally diffused. Resort may be had to the hematometer of Hazen and Nachet, which is the most accurate instrument devised for measuring the number of the red discs. It is liable to error, as curiously enough it assumes the discs to be uniform in size, or rather affects to make them so by artificial means. Also it makes no allowance for the white corpuscles which form an important element and fractional part of the whole blood mass. But, not to be too captious, it is better to accept the estimate of 5,000,000 red discs in one-fifth of a cubic centimeter of human male adult blood as the standard.

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The colored corpuscles appear *nucleated* sometimes. This nucleus has been repeatedly, not always, seen in my own blood. The writer has seen it in profile. It has been photographed.

Movements. These are caused by the clotting process, by capillarity, by evaporation, and by drying under the microscope. The red discs move in masses swayed to and fro like a collection of old bottle corks floating on a river. In themselves they are very passive. Thus they differ from the colorless ones. They are usually regarded as not possessing any amœboid movements. But the writer is inclined to think that they possess some vital movements of their own, as he has occasionally seen them move with the independence of the white corpuscles. The crenation and the bossed or spike-like prominences which are associated with drying must be vital — as they are not seen when in a thin uncovered film and dried quickly.

Arrangement of healthy red discs. They are discreet, distinct, segregated, and uniformly diffused through the field, or they are arranged in nummulations or rouleaux like coins of money.

This is due to the fibrin filaments being small, weak, and few.

White corpuscles. Features in health. 1. Their color is white. They are rightly named. This is shown with wonderful beauty in the photographs. Any objective that does not bring them out in their true color with beautiful whiteness is not a good one for blood study.

2. They vary in number relatively to the red discs. One white corpuscle to three or four hundred red corpuscles.

3. Their size in health varies less than in disease. Rarely are they smaller than the red. Usually they are much larger. Perhaps they may be rated at $\frac{1}{2200}$ inch on an average.

4. Their form is usually globar, but when dead or dried, varies constantly. Sometimes they are triangular, oblong, obovoid — are surrounded with a deeply cut and irregular

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margin forming objects of weird, bizarre, awry character difficult to imagine or describe. Indeed the grotesque changes of outline go beyond the imagination. Sometimes they will push out long lines of substance like an arm or a handle to a pan. Sometimes they will project themselves like a leech, and change their place. Indeed this is so wonderful as to demand a separate paragraph.

5. *Amœboid Movements.* *Amœba* signifies change.

Locomotion. The colored corpuscles move among the red discs like policemen in a crowd. They break through or penetrate fibrin filaments. They push the red out of the way. They go over or under them and pursue their straight onward movement like a determined officer, but they can do more than any such functionary. For they can divide themselves up into parts — separate to considerable distances — travel on and reunite their separate segments and move on again apparently whenever they will to do so. No law seems to govern their movements save independent volition, if such a term can be used in relation to such minute bodies. For example, the writer has seen a colorless corpuscle break up into (first) two parts and reunite; (second) into three parts and reunite; (third) into four parts and reunite; (fourth) into six parts and reunite. During these acts the corpuscle made an excursion over the field like the letter V. It started from the end of one leg and traveled to the end of the other leg, going to the angle of the V and then proceeding backwards over the other leg. While a white corpuscle is executing these movements their granular contents may be seen (with an exceptionally good objective) whirling and pushing along in currents and vortices of great visual violence and force. These compared with like movements seen in vegetable cells are much more impressive and independently vital. Indeed, putting out of sight the relations of the white blood corpuscles to man they appear far more fairly entitled to be considered living animals than some of the rhizopods.

It takes time to observe these changes. At first they appear slow, but when size is considered they are rapid.

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Throwing them on a screen by sunlight has been found a good method of observation. In one case the movements were so rapid as to tax a skilled draughtsman to follow their outlines with a pencil in tracing them on paper.

6. On the other hand, the white corpuscles present a phase directly opposite to that just described. When not undergoing movements they stick fast to the slide and hold on to their place as if they would move only when they mean to do so. While the red discs are rushing helplessly along in swift torrents the colorless corpuscles will be seen underneath still and quietly resisting the charges and onsets of the scudding movements. They split the stream of red discs as a rock divides the rapids of a river. They will also stick in the vacuoles or air-bubbles of drying blood. In the blood vessels they adhere to the walls and in inflammation break up and migrate out through the stomata of the epithelial lining. Certainly this sticking power compared with the amœboid movements are two remarkable features to occur in the same bodies.

7. Besides, the white corpuscles undergo in health changes in their substance that appear like vacuoles — called by the late Dr. Louis Elsberg, "bioplasson." This is often shown in disease; also in alcohol yeast plants in active work converting colloid into crystalloid and making alcohol. These facts invest the white blood corpuscles with great interest. Their study in health is a delightful pastime. It is more. It is inspiring and impressive. It is like mountain scenery to a dweller on the plains. It brings one into intimate communion with our great Creator. The autonomic movements of such minute bodies, parts and parcels of our life and bodies, even when partially understood, compel our admiration of Him "in whom we live and move and have our being."

Action of alcohol on the red blood discs live, and in situ naturali.

It is difficult to describe what the photographs show; the language of the eye is not that of speech. These photos

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were taken by G. B. Harriman, D.D.S., of Boston, in 1879, and I can vouch for their correctness. Dr. Harriman is a good observer and it is a pity that he does not continue his studies for the benefit of human knowledge. These photos are the only ones ever taken of the kind or with such high powers, to wit — the $\frac{1}{50}$ and the $\frac{1}{75}$ inch objectives of Tolles.

In the photos on the screen the observer will note that the greatest changes are in the form of the red disc when a pint and a half of whisky was drank in divided portions by a hard drinker. The protoplasm acts as if it were subjected to a chemical or to heat. It shrinks in size as the protoplasm of the tomato, for example, shrinks in cooking. But it shrinks irregularly and seems, in some cases, to partly disappear.

Again the protoplasm of the red discs, under the action of alcohol applied *in situ naturali*, acquires amœboid movements somewhat like those that naturally belong to the white blood corpuscles. It projects in budding masses of irregular shape. It projects in arm-like processes as the white corpuscles do. Such phenomena were pointed out by the late Dr. Louis Elsberg of New York, when blood was brought in contact with a solution in water of the bichromate of potash.

When it is remembered that alcohol can be drunk so as to accumulate in the blood enough to burn, as was testified to the writer by the late Dr. Adino B. Hall of Boston, who saw blood drawn from the basilar vein of a drunkard into a bowl take fire when a match was held in the bowl over the blood.

We must then conclude that alcohol in excess acts chemically and physiologically on the blood discs as shown by the abnormal shapes and motions conferred; somewhat analogous to the action on blood of the bichromate of potash, which, in large doses, is a virulent poison.

The subject is well worth working up further. Would that some friend of temperance would furnish the means to do so!

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LIST OF LANTERN SLIDES OF MICROPHOTOGRAPHS EXHIBITED BY EPHRAIM CUTTER, M.D., LL.D., JANUARY 7TH, BEFORE AMERICAN ASSOCIATION FOR THE CURE OF INEBRIETY.

All of these microphotographs were taken in 1876:

1. Dog, healthy blood; one-fiftieth inch objective. 2. Ox, healthy blood; same power. 3. Horse, healthy blood; same power. 4. Horse, healthy blood; same power. 5. Pig, healthy blood; same power. 6. Frog, one-fifth inch; Army Medical Museum. 7. Man, blood in health; one-tenth inch objective. 8. Man, white corpuscle; one-fiftieth inch objective. 9. Man, white corpuscles; amœboid movements. 10. Photograph of drawn outlines of amœboid movements of white blood corpuscle in an American's blood. 11. The same of white corpuscles of Frenchman's blood. 12. White blood, disc in human tuberculous blood; one-fiftieth inch objective. 13. Another of the same; one-fiftieth inch objective. 14. Three white corpuscles *tuberculous*, one-fiftieth inch objective. 15. The same with one-seventy-fifth inch objective; highest power in the world. 16. White blood corpuscle, one-seventy-fifth inch objective.

THE FOLLOWING, TAKEN BY GEORGE B. HARRIMAN, D.D.S., OF BOSTON, IN 1876, OF THE BLOOD OF A CONFIRMED DRUNKARD; AT THE TIME OF PHOTOGRAPHY, MAN WAS DRUNK.

17. With one-sixteenth inch objective. 18. Another specimen; same power. 19. With one-fiftieth inch objective, showing peculiar shrinking and contractions. 20. With one fiftieth inch objective, showing a peculiar arm-like projection of red corpuscle, resembling amœboid movements of white corpuscle. 21. The same with one-seventy-fifth inch objective. 22. With same power, showing peculiar loss of substance of white corpuscles. 23. Another with one-sixteenth inch objective.

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THE MATTISON PRIZE.— OPIUM ADDICTION AS RELATED TO RENAL DISEASE.— A PRIZE OF FOUR HUNDRED DOLLARS.— With the objective of advancing scientific study and settling a now mooted question, Dr. J. B. Mattison, of Brooklyn offers a prize of $400 for the best paper on "Opium Addiction as Related to Renal Disease," based upon these queries:

Will the habitual use of opium, in any form, produce organic renal disease?

If so, what lesion is most likely?

What is the rationale?

The contest is to open for two years from Dec. 1, 1890, to either sex, and any school or language.

The prize paper is to belong to the American Association for the Cure of Inebriety, and be published in a New York medical journal, *Brooklyn Medical Journal* and JOURNAL OF INEBRIETY.

Other papers presented are to be published in some leading medical journal, as their authors may select.

All papers are to be in possession of the Chairman of the Award Committee on or before Jan. 1, 1893.

The Committee of Award will consist of Dr. Alfred L. Loomis, President New York Academy of Medicine, Chairman; Drs. H. F. Fromad, Philadelphia; Ezra H. Wilson, Brooklyn; Geo. F. Shrady and Jos. H. Raymond, editor *Brooklyn Medical Journal.*

THE Austie's limit of health was two ounces of alcohol a day. This quantity would increase the pulsations of the heart five thousand beats, and diminish the exhalation of carbonic acid from the lungs twelve per cent. The people of England, according to statistics, are using on an average over three ounces daily of alcohol.

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REPORT OF THE MASON PRIZE ESSAY.*

UNDER THE AUSPICES OF THE "AMERICAN ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY."

Dr. L. D. Mason offered in October, 1889, a prize of one hundred dollars for the best original essay on "The Pathological Lesions of Chronic Alcoholism Capable of Microscopic Demonstration," the object of the essay being to demonstrate,

First, Are these pathological lesions due to chronic alcoholism?

Second, Are these lesions peculiar or not to chronic alcoholism?

A committee of the "*Medical Microscopical Society of Brooklyn*" consented to act as judges of the essays submitted, and award the prize: *Chairman*, W. H. Bates, M.D., F.R.M.S, London, England (Pres. Med. Microscopical Soc., Brooklyn), 175 Remsen street, Brooklyn, N. Y.; John E. Weeks, M.D., 43 West 18th street, New York; Richmond Lennox, M.D., 164 Montague street, Brooklyn, N. Y.

The privilege to compete for this prize was extended to all medical microscopists, and the time was limited to Oct. 1, 1890.

In response to the circular an essay was received by the special committee, entitled, "*Ueber die Einwirkung Reinen Alkohols auf den Organismus und Insbesondere das Peripherische Nerven system*," having a private motto, "*Wissenschaft ist Kosmo Politisch*," dated September, 1890, and accompanied by six lithographic drawings of microscopic slides, and six photographs, the successful competitor being Dr. Pierre Francois Spaink of Baarn, Holland.

* Read by Dr. Kemp at the January meeting of the Association in New York City.

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The essay has been printed for private use by the author, and is a pamphlet of 112 pages and an index, and contains the illustrations already mentioned; to this essay the prize was awarded. A synopsis will be of interest, in lieu of a complete translation, which may be provided at a later date.

Title. On the Action of Pure Alcohol.

Part I. Experiments on living animals, with autopsies.

Part II. Microscopical examinations of the peripheral nerves of the animals experimented on.

Part I.

The object of the experiments is to decide if degeneration of the peripheral nerves follows long-continued administration of pure alcohol. For this purpose a number of rabbits were daily given alcohol in gradually increasing doses, and for greater accuracy rabbits of the same brood were used and cared for in exactly the same way during the entire time of experimentation. Each brood served for one series, of which there were five. In each series, before beginning the experiments, one animal was killed for the examination of the peripheral nerves, and the remainder formed two groups, one of which was treated with alcohol, while the other served for the *control*. Alcohol was administered through a 16 Charrière catheter passed into the stomach of the animal, the mouth being held open by a clamp, and the rabbit confined in a specially constructed wooden case, great care being taken in all the manipulations not to press or injure the nerves of the extremities in any way. Rabbits were chosen for the experiments as emesis does not occur in them, and an exact quantity of alcohol could therefore be daily administered. The animals were otherwise well nourished and cared for. The *control* animals were also catheterized and treated in every way similarly to these under experiment, save that no alcohol was given them. Each animal was weighed before the catheterization. In order to avoid all possible post-mortem changes, with a few exceptions all the animals were killed.

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The first series consisted of six rabbits of the same brood, —one examined at first, two as *control* animals, three alcoholized (receiving on the average about two and one-third cubic centimeters of 95 per cent. alcohol a day). In all the series careful records are given of each animal, with the post-mortem appearances.

The second series consisted of five rabbits, of which, however, four died before the beginning of the experiments. They are alluded to solely for the sake of completeness.

The third series included six rabbits, of which three were alcoholized, receiving an average of nearly 3 cubic centimeters of alcohol, two as *control.* One was killed for examination before the beginning of the experiments.

The fourth series consisted of nine animals. One for examination, four for *control,* four alcoholized (average daily administration being about $6\frac{2}{3}$ cubic centimeters).

Fifth series, six rabbits. One for examination, two for *control,* three were alcoholized, and received a daily average of 8 cubic centimeters.

Part II.

a. Technical Methods.

The auricular, tibial, and pneumogastric nerves were removed from the animals as soon after death as possible, being first bound to a small grooved piece of wood, and then immediately placed in Fleming's solution, in which they were allowed to remain for eight or twenty hours. Then, after prolonged washing in running water (at least forty-eight hours), they were kept in absolute alcohol. The corresponding nerves of the opposite side were in each case similarly treated with Erlick's solution, and then placed directly into absolute alcohol. Only a few were, however, actually examined, as, after all the associated staining, the clearness of the resulting section was not satisfactory, although axis cylinders and nucleii were as a rule visible.

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After Erlick's solution, were used :

Aniline blue	Nigrosin
Eosin	Nigrosin-Safranin
Fuchsin	Picrocarmin
Haematoxylin	
Kernschwartz	

The staining of the axis cylinders after Fleming's solution, requiring tedious and repeated attempts, succeeded, however, after many combinations, in a quite constant and satisfactory way. Now and then while one or more of the axis cylinders were more or less distinct, the remaining nerve elements, notably the outlines of the fibers, and of the myelin could not be clearly seen, as stains were used alone or in combination.

Fuchsin	Kernschwartz
Borax carmine	Methyl-aniline
Nigrosin	Cochenille-alum
Safranin	Picro-carmine
Safranin and Methyl blue	Haematoxylin
Alum carmine	
Safranin aniline	
Aniline blue	
Eosin	

Of these, picro-carmine, haematoxylin, nigrosin-safranin-alcohol produced the best results.

b. Microscopical Appearances. Kind and Degree of Nerve Degeneration.

Microscopical examination gave positive evidence that after long-continued exhibition of pure alcohol on rabbits nerve degeneration ensued.

Series one and three are, on account of their short duration and the small quantity of alcohol used, scarcely worthy of mention, and in them the results of the microscopic exam-

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ination were too slight to admit of any farther reaching conclusions being drawn from them. Series four and five, however, are worthy of a more detailed review, as here the *degenerations were almost exclusively found in the alcoholized animals, and often in large numbers.* Out of 119 preparations from series four of alcoholized animals, 64 showed, as a rule, advanced degeneration, and in 78 control preparations from the same series only 8 degenerations (and those slight) were found. In the fifth series 40 out of 43 preparations from alcoholized animals showed degenerations, while 13 *control* preparations showed absolutely none. The kind and degree of these degenerations are tabulated by the author. From the table it is easily seen that they consist essentially in a splitting or fissuring of the nerve, with the appearance of elongated, usually large, collections of myeline, thickened or thinned parts of nerve fibres, myeline drops, or simply neurilemma sheathes. Very rarely could any increase of nuclei be observed.

b. Spiral or corkscrew axis cylinders. A large number (32) of preparations made from the alcoholized animals of the fourth and fifth series showed, in addition to the above described degeneration, a further peculiarity. This was a twisting or looping after a corkscrew fashion of the axis cylinders. These corkscrews recurred at varying distances on the same or neighboring fibres. At these twisted spots the axis cylinder appeared thicker, broader, and more diffuse than when their course was direct. Sometimes in badly-stained preparations these corkscrews were all that could be seen of the axis cylinder.

The question naturally suggests itself as to whether this striking appearance is a form of degeneration or a consequence of the treatment of the fibres during their preparation. From the use of the different methods of staining may at once be concluded that its cause does not lie in any particular method, for the spirals were found after any of the stains above enumerated. The preservation of the nerves in Fleming's solution could also have no influence in the produc-

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tion of these spirals, for they were observed only once in about 500 preparations made from the *control* or from the slightly alcoholized animals of the first and third series. Again, the spirals were not found on nerves exsected during life or soon after death, while they were beautifully marked on nerves which had been cut off, and some time afterward removed from the living animals, such nerves not having been placed at all in Fleming's solution. The sodium chloride used in absolute alcohol for dehydration could not have caused the spirals, for they appeared without the addition of sodium chloride.

One might ascribe some influence to the handling of the rabbit during the experiments, especially to lifting them by the ears. This was, however, done equally and often to the *control* animals, and, as a matter of fact, the spirals appeared less often in the auricular than in the tibial and vagus nerve. Special care was taken not to injure the extremities of the animals during their confinement for the purpose of catheterization. It follows, therefore, that we have to regard this formation of axis cylinder spirals as an appearance associated with the nerve degeneration, and certain of the preparations represented favor this view. An attempt was, however, made to directly prove, or at least to render probable, this association. For this purpose the auricular nerves of different living rabbits were cut through, and examined after 3½, 6, 43, and 68 hours. This examination both of teased preparations, as well as after fixing in Fleming's solution, showed the presence of the spirals as follows: in 30, after 3½ hours; in 31, after 6 hours; in 30, after 43 hours. On the strength of these results it may for the present be accepted as not improbable that *the spiral loopings of the axis cylinders should be included in the category of degenerative appearances.* An assured proof of this belief is naturally only to be reached by longer and more elaborate experiments. The intention of the present paper is but to give a brief report of the above results.

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Conclusions.

1. Long-continued injection of pure alcohol will produce in the rabbit tremor of the tongue and of the mucous membrane of the cheeks, often also in the extremities, or even the entire body.

2. Even delirium tremens may be thus produced.

3. During alcoholic intoxication in the rabbit the ciliary reflex is more lasting than the corneal reflex.

4. Pure alcohol causes, when continuously administered to rabbits, nerve degeneration.

5. A sometimes very beautiful stain of the axis cylinder may be obtained by fixation of the nerves in Fleming's solution, with subsequent use of haematoxylon, (one-half watery sol.) or nigrosin, safranin, alcohol; three parts, one part, one part, respectively.

6. The examined nerves of alcoholized animals very often showed a spiral or corkscrew-like looping of the elongated axis cylinders, an appearance probably directly connected with the nerve degeneration.

Therefore, there are pathological lesions due to chronic alcoholism, but such lesions are not peculiar to it.

The conclusions at which Dr. Spaink arrived were the result of careful and laborious effort, extending over several months of research and experiment, and carefully excluded all conclusions that could not be satisfactorily proven. Dr. Spaink has limited his observations to the action of alcohol on the peripheral nerves. This is much better than if he had attempted to prove too much by diffusing his efforts of a too extensive field. He set about to demonstrate that alcohol, habitually injected for a certain period, does produce pathological lesions of the peripheral nerves, and he has satisfactorily done so. But his observations are but the entering wedge to a more general and equally conclusive experimentation, as to the effects of chronic alcoholism on the cerebro-spinal system, either in its entirety or upon isolated portions of it; for it is upon the nervous system that alcohol produces its most rapid and destructive effect. It is well for the

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scientific world and for the community at large that such observers as Dr. Spaink have entered this comparatively new field of medicine, and the members of this association, as well as similar bodies elsewhere, should congratulate themselves that so able a scientist has become interested, and furnished original observations in this department of medical science.

After reading the above report Dr. Kemp of Brooklyn, N. Y., offered the following criticism on the prize essay, as a whole:

"The work which forms the basis of the paper bears every evidence of having been carefully done, and though the forms of nerve-degeneration described here are not those of nerve degeneration as we ordinarily see it, and though the corkscrew forms, pictured in the plates, strongly resemble certain forms often taken by the axis cylinder of nerves under manipulation, yet, from the general care with which the work was carried out, together with the fact that these forms did not occur in the *control* rabbits, to which no alcohol was given, I am not inclined to attribute them to unskillful handling in the methods of preparation; or, at least, he should have the benefit of the doubt until shown by further experiments to be in error.

"The results reached are necessarily but a very small part of what we wish to know; they are but one brick in the wall. They are the results of a continued acute alcoholism, which has hardly lasted long enough to be called chronic. On the other hand, the acute alcoholism was maintained more rigorously for the time of the experiment than we usually find in man. The most ardent worshiper of Bacchus has seldom, I dare say, maintained a rousing celebration to that God for three months, without intermission.

"The disease known as polymyelitis potatorum presents symptoms which may well go with such pathological lesions as Dr. Spaink describes in his paper, and as this polymyelitis of drunkards follows the greatly excessive use of spirits, rather than other forms of alcoholism, the analogy is all the more striking. This form of neuritis tends to recov-

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ery, or to development into chronic nervous lesions, and, by the time a post-mortem examination can be made, it is too late to judge of the state of the nerve at the time the lesions might possibly have corresponded to those of Dr. Spaink's rabbits. A few cases have been reported where the disease has involved the phrenics and vagi, and death has resulted, but, so far as I know, there was no careful examination of the nerves made immediately after death. It is not impossible that, among the various neuritic diseases of the stomach, some may be associated with nerve lesions more or less resembling those under discussion."

PUBLIC opinion is gradually getting to recognize that chronic inebriety is a form of imbecility calling for appropriate treatment, though this has only been accorded, so far, in a restrictive and tentative manner. It is but a step further to appreciate the argument that such a condition of mental degradation ought, *prima facie*, to justify divorce in the case of married people. It is true that under present circumstances even downright lunacy is not always regarded by the law as a reason for divorce, conclusive as are the arguments — social, physiological, and humane — in favor of such a view. When our legislators can be induced to introduce this, among other much-needed reforms, the propriety of placing chronic inebriety in the list of disqualifications ought to receive serious attention. Anything more dreadful than the fate of the man or woman who is linked to a lunatic or a hopeless inebriate it is impossible to conceive.— *Hospital Gazette.*

The *Popular Science Monthly* has become a necessity for every student of science. The January and February numbers are volumes in themselves of great and increasing interest. Every asylum and physician should have this monthly.

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THE TWENTIETH ANNUAL MEETING OF THE ASSOCIATION FOR THE STUDY AND CURE OF INEBRIETY.

The first quarter of a century of this association was celebrated by a dinner given by Dr. Crothers, the secretary at Walnut Lodge Hospital, Hartford, Connecticut. Dr. Mason, the vice-president, took the chair; after some congratulatory remarks, the secretary read the following letter from Dr. Parrish, who was unable to be present on account of illness:

VINELAND, N. J., November 3, 1890.

My Dear Dr. Crothers:

Believing that the time has come for me to withdraw from the presidency of our association, I desire that this letter may be offered at the next meeting as my formal resignation.

In reviewing the past twenty years, during which you have honored me with this mark of your confidence and esteem, I have been so impressed with certain facts that it would give me pleasure to recall them at this time for our encouragement and instruction. But I can only refer briefly to the following as furnishing remarkable evidence of the fact that the motives which are at the foundation of our cause are calculated to promote unity and fraternity, and that such result is decidedly manifest in our history to this time.

In the beginning, we had but one object in view — one objective point — namely, the public sentiment of the American people. Indeed, at that time, popular opinion on the subject of our specialty, may be said to have had no visible existence. What was needed, was an arousal first, and then a shock. Our Declaration of Principles had the effect at once to awaken and enliven public thought, and from then till now we have had the public ear, and in considerable measure the public heart.

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Coming together as we did, and for the first time assembled from different parts of the country, what was our position? We met face to face with a new and untried problem, which no previous age had attempted to solve, and face to face with ourselves, each with his peculiarities of character and personal prejudices and preferences, his separate habits of thought, and lines of pursuit. With strong convictions and positive views, differing in age, circumstances, and experience, it would have been no marvel if in a short time confusion had entered in, and weakened or broken our ranks. But it was not so. A cementing force was at the bottom of the entire movement, which admitted of no element of disaffection or mistrust. During the score of years that are passed, there has not been a single breach in the mutual confidence and loyalty which were productive of the harmony of our actions and the unity of our conclusions. Here is a testimonial that verifies the oneness of purpose, and unalloyed principle which at the bottom of the cause enabled us to anticipate such success as has been realized.

The public mind has been educating itself, for it only needs intelligence, thoughtfulness, and virtue without prejudice or jealousy, to bear upon this subject to ensure for it acceptance and belief. These qualities belong to the American people, and in the main to all peoples, and in proportion to their prevalence will be the acceptance of the doctrine which it is founded to promulgate. I cannot withdraw from active service without expressing my hearty appreciation of the constancy of your friendship and the unfailing urbanity and kindly consideration and forbearance which you have shown me in the discharge of the responsible duties of the office which I now surrender, hoping with all my heart that whoever succeeds me will witness more fruit-bearing than we have had so far. Still more let me say, that I thank you for consenting to my resignation, while such memories as have been alluded to are still fresh in my mind, and though my health and strength have for some time past been declin-

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ing, I can but hope that I may so far escape mental failure as to enable me to cherish such memories to the end.

Yours in fraternal friendship,

JOSEPH PARRISH.

After some remarks, Dr. Crothers offered the following:

Resolved, That this association notes with regret Dr. Parrish's letter of resignation, and desire to place on record our unanimous wish that his letter be returned, and his name be continued as president.

As founder of this association, and most intimately identified with all its interests for a quarter of a century, his resignation cannot be accepted without leaving an inference unjust to all. While most kindly dissenting from his expressed wish, we take great pleasure in conveying our most sincere congratulations that he has been spared to see the association attain its present age, and become a permanent working force in the scientific world. We also express our confident hope that he may be permitted to share in our future successes, and see still greater advances of our association and work.

Remarks were made by Drs. Day, Mason, Shepard, Mattison, Quimby, and Russell, after which the resolution was unanimously passed.

A report on the "Mason Prize Essay" was read and ordered printed. The committee on secret drugs and nostrums made a preliminary report, and was continued for the coming year. (These reports will appear in the JOURNAL.) The old board of officers were re-elected for the coming year.

Dr. Thwing gave a short address "on Inebriety and Insanity in Japan." Dr. Mattison read some remarkable histories of *opium and other narcotic inebriates.*

On motion of Dr. Crothers a committee was appointed to arrange for a series of monthly meetings in New York city for a more exhaustive discussion of the many phases of inebriety, and also to celebrate the first quarter of a century in the history of the association.

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A committee, consisting of Drs. Crothers, Mason, and Mattison, was appointed.

Resolutions of thanks to Dr. Crothers was passed, after which the society adjourned.

The committee to arrange for a series of anniversary monthly meetings decided on five separate meetings at the hall of the Academy of Medicine in New York city. The first meeting was held December 10, 1890. Dr. Mason presided, and delivered an address, which appears on another page; after which Dr. Crothers of Hartford, Conn., read a paper "On Alcoholic Inebriety and Life Insurance."

The second paper was read by Dr. Mattison of Brooklyn, on The Relation of Opium Inebriety to Life Insurance. (These papers will appear later in the JOURNAL.) After a brief discussion the association adjourned.

The second meeting was held January 7, 1891. Dr. Mason, in the chair, remarked that this was the first effort in this country to discuss the pathology of alcoholism for an entire evening.

The English Pathological Society two years ago spent two evenings in the study of this subject. Most naturally, our society should lead all others in this field, and we have done so along the lines of clinical study, and to-night we turn to study some of the latest facts which are known on the effects of alcohol on the system. We approach this topic with great confidence, that we are no longer alone; a constituency that is rapidly increasing every year are following us with deepening interest and sympathy. At last this great topic must come under the full blaze of scientific light, the facts cannot evade or escape the sharp scrutiny of the army of pioneer workers who are pressing on over the frontiers of science more rapidly every day.

Dr. G. T. Kemp read the report of the Mason prize essay, then discussed the latest conclusions of science on the pathology (see papers in this JOURNAL.) Dr. Weeks and others discussed the paper.

Dr. G. B. Hope read a paper on "The Action of Alcohol on the Throat," also published.

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Dr. Mattison, in the absence of Dr. Wright, read his paper on "Brain Palsies."

Dr. E. Cutter read a paper describing healthy blood, and illustrated it by the lantern, showing the blood naturally and the effects of alcohol on the red corpuscles.

The association then adjourned.

ALCOHOL AND CHILDHOOD.

Professor Demme of Berne, at the recent International Alcohol Congress at Christiania, presented an interesting report of an investigation which he had made as to the influence of alcohol upon children. Having unusual opportunities for this study from his position as superintendent of a hospital for children, he selected two groups of ten families each, under similar external environment. One group of fifty-seven was manifestly affected more or less by alcohol; the other of sixty-one was unaffected, or at least very little affected. Of the fifty-seven who exhibited the effects of alcoholism, twenty had inebriate fathers, the mothers and grandparents being moderate drinkers. Only 45 per cent. of these (nine) had healthy constitutions; thirty-one had inebriate fathers and grandfathers, but temperate mothers and grandmothers. Only two of these, or a little over 6 per cent., were healthy. Six children had parents and grandparents intemperate; one of these survive, a sufferer from epileptic seizures. In remarkable contrast is the state of the sixty-one children belonging to temperate families, 82 per cent. of whom enjoy good health, three have died, and eight are in bad health. Professor Demme also reported the results of an experiment on several children, from whom all intoxicants were kept during eight months, and to whom the usual allowance of wine and water was given during the remaining four months of the year. These children were reported to have slept more soundly and longer, and to have appeared in better spirits and more active, during the non-alcoholic eight months than during the alcoholic four months.

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Abstracts and Reviews.

THE CURE OF THE MORPHIA HABIT.

This little work, by Dr. Oscar Jennings of Paris, brought out last year, has several features of value worth noting.

It details the Jennings' method of treating morphinism — the morphine *disease, not* habit — which consists in a decrease of the drug during one, two, or more months — at first hypodermically, if so habitually taken, and later by mouth or bowel. When reduction is nearing completion he employs sparteine and trinitrine — nitro-glycerine — the former by mouth, five to six centigrammes, thrice daily, as a cardiac tonic, and the latter with, or without nitrite of amyl, as a substitute for the morphia stimulus to the brain.

Drs. Jennings and Ball, by means of the sphygmograph, made the ingenious discovery that the pulse of a morphia habitué in the abstinence stage presents a peculiar, depressed plateau, due to cardiac weakness and arterial resistance, which is quickly restored by re-using the drug, and they found by experiment that sparteine and nitro-glycerine produced an effect on this tracing very like the habitual opiate.

Reasoning from this analogy, they employed these drugs, and with success. Dr. Jennings says, however, "sparteine and trinitrine are not *substitutes* for morphia, and will not take its place as long as a vital necessity for it remains, but when the weaning is almost complete they relieve the morbid craving . . . to a sufficient degree to enable the patient earnestly desirous to quit the drug." Several tracings illustrate these cardiac conditions.

He further thinks they afford proof as to an honest decrease. "If the plateau is not obtained when the patient ought to be in a state of want, he takes morphia secretly."

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He advises treatment in special asylums, where patients are few, and, very wisely, insists on a proper, regular plan as regards drug decrease, both as to extent and time of taking, and the need of patients appreciating this, and assenting to it. And the same care and regularity should obtain as to food and sleep; no digestless meals at uncanny hours; no retiring and reading in bed under pretext of waiting for sleep. He is right. Boulimic indulgence should end; patients should go to bed at a proper hour, and lights out with the going. If at first unable to sleep they must persist in the effort, and the morphia effect expended in reading will be diverted to its proper channel and slumber come. Those who have had experience with these cases know how late and irregular their sleep-time is, and the break up of this bad practice should be complete.

He refers to another class — those who know more about their disease and its treatment than the doctor. There should be no half-way measures with such patients. They must be made to understand that, for the time, *their* ideas are to be in abeyance, and, if having confidence in their medical adviser, and hope of success, *he* is to direct. Dr. Jennings emphasizes this point by citing thirty-two cases treated during the past three years, six of which—some five, ten, and fourteen years' duration — faithfully followed instructions, and were cured. The others did not, and failed.

Dr. Jennings is in error when he says that the Mattison method consists in giving the bromide of sodium for "a week or so," and then reducing the morphia. The essential and original feature of that method is to reduce the opiate and give the bromide *at the same time*, during several days; increasing sedation with increasing reduction — not consecutive taking — so that one effect counteracts and controls the other.

He advises quitting the syringe and taking the drug by mouth. There is no question as to the wisdom and value of that change. Against the gastric disorder that may arise he uses soda-bicarb. freely in the form of Vichy water, and lin-

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seed. Of the latter, he says, "both for morphia habitués and others, I know of no medicine to equal it in slow, laborious digestion with pain or heaviness, and in flatulent dyspepsia, with constipation or diarrhœa."

For the unrest of the closing period, he advises the hammock, and with some, the tricycle.

To control insomnia of the crucial quitting, he formerly used drugs, but now relies on the hot air bath, repeated, if needed, and followed, when proper, by a cold douche.

The unwisdom of free alcohol during treatment, and the special risk in its use by ex-poppy habitués is rightly insisted on.

We advise all who have a personal or professional interest in the subject to read this little book. MATTISON.

CHRONIC INTOXICATION FROM MORPHINE.

This is the latest work from French sources by Dr. Regnier of the Paris Academy of Medicine. Time and space are not now at command for a review. His conclusions — to some of which we do not assent — are :

1. The prolonged use of opium or its salts cause a chronic intoxication called morphinism.

2. Every one who uses the drug is more or less liable to this result.

3. There are two causative factors — desire and need.

The difference in cause produces difference in symptoms — *i. e.*, two forms of intoxication, one free from accessory element, the other with a morbid appetite added.

5. This distinction is important as regards prognosis and treatment.

6. Patients of the first class are distinct from the second by absence of intoxication symptoms and mental manifestations, and by lack of special symptoms that may become grave on quitting the drug.

7. The disease is characterized by a sense of need ; by the almost constant presence of a nervous condition, heredi-

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tary or acquired, or by physical or psychical signs of degeneration, and symptomatically by a mixture of physco-sensorial phenomena with those of morphia intoxication, pure and simple.

8. The quitting of morphia causes in the first class, a group of special symptoms that, as regards their intensity, are independent of the extent of the daily dose or the duration of the disease.

9. Morphinism will not absolve a person accused of crime, under pretense of lack of conscience or the force of irresistible impulse. It never causes irresistible impulses.

10. Morphinism alone seldom induces mental ravages up to entire irresponsibility.

11. It can, however, lead to mental modification, during which resistless impulse is possible. The mental symptoms caused by abstinence, more or less complete, should be considered in determining responsibility.

12. Morphine should be avoided or closely watched, even when the disposition to it seems slight.

13. Morphinism is a grave disease — not only as to individuals, but in its social and medico-legal bearings. It is rebellious to treatment and easily recurs.

14. A pre-requisite to success is careful surveillance to avoid secret supply.

15. The patient, however, should not be put among the insane or confined against his will, unless he presents symptoms dangerous to himself or to others. Then he is demented and asylum care is legally just.

16. Morphinism being so important as regards public health and morality, and especially decrease of population, it would be wise that stringent laws should forbid the illegal sale of morphine. The ease with which it can be gotten apart from medical advice is the leading cause of the growth of morphinism.

17. The prospect of success in severe cases is not good. Entire quitting is not always possible. Recurrence is likely. Complete cure cannot be hoped for save in recent cases without ancestral or acquired nervous taint. MATTISON.

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DISEASES OF WOMEN AND UTERINE THERAPEUTICS; By H. MacNaughton Jones, M.D. Bailliere, Tindall & Cox, King William Strand, London, 1890.

This well known manual of diseases of women has now reached the fourth edition, which is good evidence of its great value. The Fellows Hypophosphite Co. of New York are sending out complimentary copies of this work to their friends. No more practical gift could be made, and this company is doing good service to science wherever this work is sent.

IN DARKEST ENGLAND AND THE WAY OUT; By Gen. William Booth. Funk & Wagnalls, 18–20 Astor Place, New York City, 1891.

This is literally one of the great books of the day, calling attention to the problems of pauperism, criminality, and charities, particularly of London, and suggesting remedies and means for relief. The medical reader is astonished at the broad views of the author and the practical scientific measures of escape.

Referring to inebriates and prostitutes, and the heredity which controls them, he says:

"Thousands upon thousands of these poor wretches are 'not so much born into this world as damned into it.' The bastard of a harlot, born in a brothel, suckled on gin, and familiar from earliest infancy with all the bestialities of debauch, violated before she is twelve, and driven out into the streets by her mother a year or two later, what chance is there for such a girl in this world? — I say nothing about the next. Yet such a case is not exceptional. There are many such, differing in detail, but in essentials the same. And with boys it is almost as bad. There are thousands who were begotten when both parents were besotted with drink, whose mothers saturated themselves with alcohol every day of their pregnancy, who may be said to have

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sucked in a taste for strong drink with their mother's milk, and who were surrounded from childhood with opportunities and incitements to drink."

In a graphic, forcible way he calls for a million dollars to carry out his plan of establishing Rescue Homes in the city, and farm training schools in the country, and farm colonies in distant countries. He urges asylums for inebriates with equal clearness, and believes no reformation can be effectual unless it approaches the subject from the physical side. This work clearly outlines the most advanced views of the greatest thinkers, and will amply repay a most careful reading.

EPILEPSY, ITS PATHOLOGY AND TREATMENT; By H. O. Hare, M.D. F. A. Davis, Publisher, Philadelphia, Pa., 1891.

This little work is a prize essay, and an admirably condensed statement of the clearest authenticated facts on this subject known. The author is evidently a master in the art of clear, condensed statements of what is known, and he could do a great service to science by "boiling down" some of the thousand-page volumes that are coming from the press. This work is of great value to all physicians who wish to have the facts concerning epilepsy in the most available form.

The following extract on *alcoholic influences* gives the reader a good idea of the work and what is accepted as established up to this time:

"Another form of hereditary taint in this disease is the alcoholic habit in the parents, and here we are brought to another cause of epilepsy, which may be placed under the class of predisposing causes or heredity. It is evident, too, that in this condition epileptic children may result from the insanity of rum as well as the ordinary type of insanity.

"The relation of epilepsy to alcoholism does not end here, for the drug may not only produce epilepsy by inheritance, but directly in the drinker himself.

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"As the two subjects are so inseparable they will be considered together.

"The alcoholic beverages which are particularly efficient in the production of epilepsy are those containing some aromatic, and of these absinthe is certainly most remarkable in its power. When injected into the veins of a dog or monkey it produces violent epileptic convulsions, which are eventually followed by death.

"In connection with the influence which alcohol exerts in producing epilepsy directly in the drunkard, it may be said that in nearly all such cases there must be lurking somewhere a tendency toward that form of nervous disturbance which breaks forth under the influence of the alcohol circulating in the blood, or is set going by the depraved state of the nervous system, the result of frequent debauch.

"Echeverria has analyzed 572 cases of alcoholic epilepsy; 307 were males and 265 females.

"Divided into classes 212 belonged to the middle or upper classes, 306 to the lower classes, while 108 were uneducated, and 57 were outcasts."

Dividing all the 572 cases into three classes, he finds:

Two hundred and fifty-seven could be traced directly and entirely to alcohol.

I. One hundred and twenty-six, in which there was also an associated history of syphilis in 67 and traumatism in 42 as an exciting cause. Of the remaining number of this group ague was given as an additional cause in 2 males, sun-stroke in 9 males, and the excessive use of tobacco in 1 male. Mental anxiety was also an exciting additional cause in 5.

II. One hundred and eighty-nine cases, 92 males, and 97 females, in whom alcoholism was the result of the epilepsy, quite as much as the epilepsy was the result of the alcoholism.

Of the first class 92 had alcoholism present, alone or with epilepsy, in the parents, while in 86 cases of division three a tendency was inherited from insane or epileptic parents or

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grandparents. From these 225 cases he summarizes as follows:

In 39.33 per cent. there was a direct hereditary tendency to epilepsy or to alcohol and epilepsy.

Parental intemperance solely originated the predisposition to epilepsy in 17.30 per cent.

Parental intemperance associated with epilepsy or insanity existed in 15.96 per cent. of the males and 19.24 per cent. of the females, making a total of 17.48 per cent. of the entire number of cases. Parental epilepsy was found in 12.7 per cent. of the males and 15.84 per cent. of the females.

Parental insanity and epilepsy, without any history of alcoholism, was met with in 4.54 per cent. of the entire number of cases. The reader will note the difference between the percentage of males and females.

Parental intemperance, not ingrafted into insanity, without any history of alcohol save in the parents (not grandparents), is 2 per cent. lower in females than in males.

In the aggregate number of cases of intemperance in the parents, irrespectively put together, there is an increase of 15 per cent. in the males over the females. A preponderance of 3.28 per cent. again on the female side when intemperance is associated with heredity, or insanity appears as the hereditary cause; and this difference in favor of females is almost the same in relation to patients sprung from parents tainted with epilepsy.

Clarke has shown that this preponderance of hereditary epilepsy among females rises to a considerably greater extent as a predisposing cause of epilepsy and crime, being 66.7 per cent. among females against 38.1 per cent. among males.

Of the 139 epileptics of the first division with hereditary taint, 64 per cent. of the males and 82.2 per cent. of the females suffered from convulsions in childhood, although they did not become epileptic until after 18 years of age, and then in consequence of intemperance.

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In most of the 86 cases of the third division who had hereditary taint epilepsy was developed in childhood, or before 15 years of age; and it is remarkable that every one of these had suffered from fits in childhood, while in addition 14 had left hemiplegia and 3 right hemiplegia and idiocy.

Four had wasting paralysis of one arm, 5 palsy of one leg, 4 Pott's disease of the spine, and 5 facial palsy. Five had strabismus, and 5 deafness and otorrhœa, all dating from infancy.

The chief point in the 67 cases of the second division, complicated with syphilis, is that in 49 of them the fits were followed by palsy.

Mental disturbances were more severe in these cases than in those of pure syphilitic brain-lesion.

In the third division there are still 103 cases to be accounted for, in which the cause was ascribed to head injuries and climacteric change.

Drouett collected 445 cases of alcoholism in males, of which 45 were epileptic from alcoholism alone, while in 87 female alcoholics 9 were epileptic. As to the age most common to alcoholic epilepsy, he finds that below thirty years the proportion is 1 in 15; between 30 and 50 years it is 1 in 8.

Moeli has studied the same question in Germany, and reaches the conclusion that alcoholic epilepsy is common, and that from 30 to 40 per cent. of all persons with delirium tremens are epileptic.

Martin has collected interesting facts as to the influence of parental intemperance in the production of epilepsy in children. In 150 cases of insane epileptics at the Salpêtrière he found 83 with such a history. He divides them into two classes, the first comprising 60 cases, or over two-thirds, in which alcoholism in the parents was a certainty, and, second, those in whom such a history was not so clearly defined.

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The 60 cases belonging to the first class had 244 brothers and sisters. Forty-eight were afflicted with convulsions in early infancy. One hundred and thirty-two were dead in 1874 and 112 still living, nearly all of them young and nearly all with damaged nervous organizations. Of the second class there were 83 brothers and sisters, of whom 10 were epileptic and 46 still living.

These figures do not include the patients themselves, and all the patients were from different families.

When we summarize, we find that, in 83 families with 410 children, 108 were epileptic, more than one-fourth.

In 1874, 169 children were dead and 241 living, but 83 of these were epileptic, more than one-third.

An interesting case, which, to the author's mind, indicates disease followed by alcoholism, rather than alcoholism followed by disease, is one recorded by Bourneville, of a child aged about 4 years. There was marked alcoholism, produced by large quantities of white mice, for about one year before the attack of epilepsy, but at the autopsy there was found a softened condition of the brain and destruction of the cortex, the result of meningo-encephalitis.

The cunei were very small, blindness having been present for some months. Microscopical examination revealed sclerosis of the pyramidal ganglion-cells, most marked in the cortex in the occipital region.

NERVOUS EXHAUSTION; By Geo. M. Beard, M.D. E. B. Treat, Publisher, No. 5 Cooper's Union, New York City, 1890.

This work, written some years ago, is still of great value, and the leading book on this topic to-day. A new edition, edited by Dr. Rockwell, greatly enhances its usefulness. It is safe to say that no physician can be acquainted practically with this form of disease unless he has read this work. No other book published covers the same field so clearly and exhaustively.

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A TREATISE ON HEADACHE AND NEURALGIA, ETC., ETC.; By J. Leonard Corning, M.D., Author of Brain Rest, Treatise on Hysteria and Epilepsy, Etc. E. B. Treat, Publisher, No. 5 Cooper's Union, New York City, 1890.

This work is a fair resumé of the general facts and methods of treatment known and practiced in these most intractable disorders. The author is exceedingly practical and devotes most of the work to measures of treatment, many of which are new and original. As a whole this work is a valuable addition to the literature of this subject.

THE ORIGIN OF THE ARYANS.—An account of the Pre-Historic Ethnology and Civilization of Europe.—By Isaac Taylor, M.A., Litt. D.—Two double numbers (130 and 131) of the Humboldt Library. Price 30 cents each. The Humboldt Publishing Co., 28 Lafayette Place, New York.

The last ten years have seen a revolution in the opinion of scholars as to the region in which the Aryan race originated, and theories which not long ago were universally accepted as the well establised conclusions of science, now hardly find a defender. The theory of migration from Asia has been displaced by a new theory of origin in Northern Europe. In Germany several works have been devoted to the subject, but this is the first English work which has yet appeared embodying the results recently arrived at by philologists, archæologists, and anthropologists. This volume affords a fresh and highly interesting account of the present state of speculation on a highly interesting subject.

The publishers are to be congratulated on the new cover, which is truly artistic and durable.

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MENTAL DISEASES; By Charles F. Folsom, M.D., Professor of Mental Diseases at Harvard College.

This is a very valuable condensed statement of the general facts of the most common diseases of the brain and the principles of treatment. "The Early Stage of General Parralysis," "Disorders of Sleep and Insomnia," by the same author, are two very suggestive monographs that should be read by all practical physicians.

THE EVOLUTION OF SEX. By Prof. Geddes and Thomson, Humboldt Publishing Co., 26 Lafayette Place, New York City. Publisher, 1891.

This is another of those very choice scientific works issued by this firm, and sold for 30 cents a volume in two volumes. It is a most excellent work, well illustrated, and is replete with very valuable facts.

TEXT BOOK OF HYGIENE, A Treatise on the Principles and Practice of Preventive Medicine from an American Standpoint. By George H. Rohe, M.D., Prof. of Obstetrics and Hygiene, at the College of Physicians and Surgeons, Baltimore, etc. Second edition. F. S. Davis, Publisher, Philadelphia, Pa, 1890.

This handsome volume of over four hundred pages, with good clear type, reflects great credit on both publisher and author. The arrangement of the chapters and the discussion of the topics, are practical and concise, and in most cases embodies the latest facts and views of all authorities up to date. It is a source of pleasure to find a classical work on this subject by an American author, and we most heartily commend this work to all our readers, as deserving a place in every library of scholars and physicians. We shall notice this work again in the next issue.

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The *Physician's Visiting List* of P. Blakiston Son & Co., has reached its fortieth year of publication, and is one of the most complete and compact in arrangement of any published. It is literally a volume of most practical facts in addition to the patient's list. Send for a copy.

A MUCH NEEDED LEGISLATION.

The following editorial in the *Southern Medical Journal* of Atlanta, Ga., by Dr. Griggs, has the true ring of the twentieth century:

"Now that the representatives of the people are assembled at the capital in the capacity of legislators, it is in order for us to make such suggestions as will more fully acquaint them with our wishes and necessities.

"Some provision ought to be made for the care-taking and reformation of the unfortunate inebriates of the State. It is a crying shame that nothing has been done in the empire State of the South to give this greatly-needed relief. The world is very uncharitable towards the victims of alcohol. Prohibitory laws have proven a failure; public sentiment is morbid on the subject. Temperance union movements have done much good in educating public opinion, but cannot reach these poor, ruined individuals. What shall be done with them? If inquiry be made, it will show that a large per cent. of the crimes committed — especially the homicides — are due to the effects of whisky, or some other alcoholic liquor. The sale of intoxicants is licensed and the revenue turned into the public treasury, but there is no provision made to reform the miserable drunkard. Why is this? It is because of the *false opinion* that is abroad that drunkenness is a *sin*, but not a *disease*. Such belief obtains only among the uninformed. But we will not stop here to discuss the question. We know whereof we speak when we say that inebriety is one of the most intractable diseases known to the science of medicine. It makes a physical, mental, and moral

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wreck of the individual, unless restored by appropriate treatment. Leaving all other questions aside, we feel that if the State of Georgia would establish and endow an asylum for these unfortunate citizens, it will prove a most economic legislation. The cost of keeping and prosecuting criminals, and providing for the insane in the asylum, would soon diminish sufficiently to admit of the establishing of suitable hospitals for the inebriate without any increased expense to the State. Humanity cries out, the heart-broken wives cry out, and the worse than fatherless children cry out for something to be done in this behalf. Legislators have promised to make needed reforms. Here is their golden opportunity. We are confident that Governor Northen will stand by them; that the people will give them their hearty endorsement, and when they return to their homes, it will be said, 'Well done, thou good and faithful servants.'"

MERCANTILE SPELLER, is a work compiling words and their prefixes used mostly in correspondence, and published by the author, Mr. Edmund Blunt, 159 Front street, New York City. It will be found of the greatest practical value as an office work. Send to the author for a copy.

Dr. Beaumetz says, in a recent lecture, excessive alcoholic drinkers are diabetics often, and are able to use excessive quantities of spirits because of the functional activity of the kidneys to eliminate it quickly. When persons are found capable of taking large quantities of spirits without the usual intoxication, it is a hint of disease of the kidneys. Alcoholism and diabetes are frequently associated.

The laws of *Draco* in force at Athens, condemned to death any person convicted of being drunk. Persons who were seen to enter a drinking house were dishonored ever after. Notwithstanding this, inebriety steadily increased, and became alarming in its extent and publicity.

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Editorial.

THE OUTLOOK IN 1891.

A quarter of a century has passed since the Association for the Study and Cure of Inebriety was organized. On a bleak November day in 1870, a small company of physicians formulated the first authoritative declaration of the disease of inebriety and its curability. For two thousand years this fact had been floating round the currents of scientific thought, alternately seen and doubted, described and denied. At last the time came for its permanent recognition, and the occasion, and the little group who realized its import, became a great historic landmark for a new and wider field of psychological research.

In January, 1871, the religious reform, temperance press, and daily papers, followed by the great army of "time servers and camp followers" of all progress and civilization, uttered loud protests and contemptuous sneers at the idea of the disease of drunkenness. This infant association was overwhelmed with reproaches, and many of its early friends deserted, and joined the ranks of the doubters.

Twenty years have come and gone, and the association numbers among its members leading physicians in every State of the Union. Among its corresponding and honorary members are some of the most distinguished scientific physicians of the world.

This issue of the JOURNAL OF INEBRIETY will be read by over two thousand physicians in every civilized country, and be found in nearly all the leading libraries, and asylums for insane and inebriates.

The early storms of opposition have not yet died away. The silent contempt of the older physicians (who are often mentally unable of recognizing new truths), like receding

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storm clouds, still hang over the horizon. Mutterings and sullen echoes, denying the disease and curability of inebriety, except by moral means, are heard at longer and increasing intervals.

The army of scientific advance has taken up a line of march toward the solution of this "drink disease" from the physical side. The history of this march is the purpose and object of this JOURNAL.

A new era begins with this anniversary of the first quarter of a century, in the monthly meetings of this association for the special study of different phases of inebriety.

Abroad, both the *English*, *German*, *French*, and *Swedish* societies are manifesting great activity. Their reports and journals are replete with new and startling facts. Every year the scientific advance removes the subject farther from the realm of morals and ethics, to one of accurately observed facts and their meaning. To-day, inebriety is a question of *heredity*, *environment*, *defective* brain and nerve vigor, and mental contagion. The extent and popularity of the association is of small moment compared with the fact that its principles and workings *are right.* After a quarter of a century of bitter persecution, it is still leading all scientific work in this field, and the many discussions of particular phases of the subject is the unmistakable evidence of this fact. This is an advance of all other societies of the world. The JOURNAL warmly shares this honor with the association of following up this new path of psychological advance toward the solution of one of the greatest problems of modern times. Both JOURNAL and association send warmest greetings to its readers and members.

The approach of the new century brings with it greater promise, and greater interest in the possibility of stamping out inebriety and curing the victim, and changing all this terrible mortality, sorrow, and loss. Broad scientific study of facts and conclusions will point out the way and practical measures to secure this end.

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IT is our painful duty to announce the death of Dr. Joseph Parrish at his home in Burlington, New Jersey, January 15, 1891. For over two years he had been suffering from organic disease of the kidneys, yet during this time he continued his literary work and interest, with much of his old time energy, up to the end of life. He was born in Philadelphia, Pa., in 1818; his father was a distinguished teacher and practitioner, and his early training and preparation for professional work were very superior.

He began the practice of medicine in Burlington, New Jersey, the home of his wife. Later he was called to the chair of Diseases of Women and Children in the College of Physicians and Surgeons in Philadelphia. After a time his health failed, and he resigned. Two years later he came back to his home at Burlington, and started the *Medical and Surgical Reporter* of Philadelphia, Pa., a very prominent and influential journal up to the present.

His health becoming impaired again, he went to Europe, and was soon greatly interested in hospitals and asylums, and spent two years visiting and studying the different institutions of the old world.

On his return he organized and conducted the Pennsylvania Training School for Idiots. During the war he was a member of the United States Sanitary Commission, and did much field service. After the war he organized and conducted the first private asylum for inebriates in the country at Media, Pa. In 1870 he organized the American Association for the Study and Cure of Inebriety. He was called a few years later as a special witness to go before the English Parliamentary Committee on Habitual Drunkards.

Still later he organized the Maryland Inebriate Asylum, and conducted it a few years. His wife became an invalid, and he went back to Burlington, where he passed the remainder of his life. Here he organized an asylum for

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nervous invalids, which has been in successful operation up to the present.

Through all these busy years Dr. Parrish has led an active literary life, contributing essays, reviews, and original studies on many topics. He has visited Europe a number of times, and in 1879 he was given a public dinner in London by the English Society for the Study and Cure of Inebriety.

Dr. Parrish will be remembered more for his work in the Association for the Cure of Inebriates, and for his very suggestive studies along this new line of research. In 1883 he published a volume called "Alcoholic Inebriety from a Medical Standpoint," which was well received, and as a pioneer work was really remarkable for its clearness and scientific grasp of the subject. Like all others who lead human progress on new lines of thought, Dr. Parrish had some bitter and unfair opponents, largely from the ranks of so-called temperance reformers. With a generosity and kindly spirit that was rare, he seldom replied or referred to this, except to pity the ignorance and want of true scientific spirit of these critics. In both public and private life, Dr. Parrish was ever the same quiet, genial, magnetic man, who lived on a sunny plane, that was felt by all who came in contact with him.

Our society will ever be a monument to his genius, and far-seeing judgment, that recognized the time had come to organize the truth into the field of practical life. Farther down in the future a more accurate estimate of Dr. Parrish and his life-work will be made. At present we can simply note the fact that a really great student of the new realm of psychology has put off all that is mortal and passed away. He has left the world better, and raised the plane of scientific study into a new and wider field, and left behind him a flood of pleasant memories that will go on down with this generation to its close.

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NORMAN KERR, M.D., F.L.S.

Our readers will be interested in the strong, attractive portrait of Dr. Kerr of London, in this issue, and be pleased to learn something of the personal history of the man who is now so prominent as a leader in the scientific study of inebriety.

Dr. Norman Kerr was born in 1834, in Glasgow, Scotland, and graduated from the university of that city in medicine, in 1861. After several years of study and travel on the continent and in America, he began active professional work at Bedford, England. A few years later he went up to London, where he soon built up a large general practice. His reputation as an advanced thinker in the medical study of inebriety began in student life; but a paper read in 1876, questioning the value of "stimulants in work-houses," and soon after two papers "On the Mortality of Inebriety," read before the British Medical and Social Science Associations, attracted wide attention and gave him prominence as authority in this field. These papers were widely circulated, and translated into other languages.

From this time, Dr. Kerr has been a voluminous writer and lecturer on all the varied phases of inebriety and alcoholism. He has persistently urged, with a marked clearness, that inebriety was a disease, and that inebriates should receive medical care and treatment, and also that alcohol was at least a dangerous remedy.

While these facts are not altogether new to science, they are really revolutionary to the public sentiment of the day, and of necessity bitterly opposed, and treated in many ways with contempt. But opposition never crushes out any real truth; it only gives it firmer root and growth, and rouses for its defense men of "heroic cast," with faith and courage that rise far above the levels of current thought. Such defenders are the great pioneer leaders of human progress, whether recognized or not in their day and generation.

In 1881 Dr. Kerr delivered an address "On Wines,

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Scriptural and Ecclesiastical," which became a volume of unusual critical interest among scholars and theologians. The numerous pamphlets, papers, and addresses which followed each other in rapid succession, from Dr. Kerr's pen, were finally all condensed in a large volume, entitled "Inebriety, its Etiology, Pathology, Treatment, and Medical Jurisprudence." This work has already reached the second edition, and is recognized as the leading text-book on this subject, and is practically a monument of the author's genius and scientific discernment in this field.

Dr. Kerr was one of the founders of the Dalrymple Home, and much of its success is due to his untiring energy and skill. He is president of the board of management and consulting physician, and is practically the creator of this, the model asylum of England to-day. In 1884 Dr. Kerr organized the second society in the world for the medical study and cure of inebriety, of which he has been president ever since. This society and its work have attracted great attention all over Europe, and its papers and transactions are read with increasing interest. In 1887 Dr. Kerr was president of the first International Congress for the study of inebriety, which held a two days' session in London. This event marked a new era in the scientific study of inebriety, which has been felt all over the world. Dr. Kerr is an honorary member of many of the leading societies of Europe and America, and also of the American Association for the Study and Cure of Inebriates, and his papers in the JOURNAL OF INEBRIETY always attract wide interest and attention.

Although pursuing the general practice of his profession, Dr. Kerr's writings have placed him among the leading authorities of the world, and brought a large clientage among the alcoholic and opium inebriates ; this, with the active care of the Dalrymple Home, and the growing demands for papers and lectures on this topic, make him one of the most busy men of the day. Fortunately, Dr. Kerr is of vigorous constitution, and is most happily situated in his social relations, having an accomplished wife and family, who most enthusi-

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astically share all the trials and triumphs of his work. The pioneer teacher of the disease of inebriety in England has a harder task to overcome the errors and superstitions of long centuries than in America. Both have to struggle against fierce opposition, and endure the sneers and misrepresentations of cotemporaries.

While the truth may be accepted and endorsed by large numbers, the few pioneer defenders are still the objective points of attack for the doubters. Dr. Kerr has not yet escaped the fires of persecution which burn about every new advance of science. From all sides it is evident that the disease of inebriety and its curability is no theory and individual opinion, but a fact that can be demonstrated in every circle of society. Dr. Kerr's work along this line has given him a national reputation, and been of inestimable value to science and humanity, and his American cotemporaries fully recognize this, and with gratitude join in the warmest tributes to his praise. Dr. Kerr is yet in the prime of life, and the advanced work already done gives promise of a more brilliant future. The frontiers of the subject have been scarcely crossed, and among the few "videttes" who are marking out paths for the army of scientific advance Dr. Kerr will be remembered for his work far down into the future.

ETHER INEBRIETY.

Dr. Hart's address on ether intoxication, before the English society for the study and cure of inebriety, has called renewed attention to ether drinking in the north of Ireland. The result has been that government has placed ether among the list of poisons, which makes it a severe penalty to sell it except for legitimate purposes and to responsible parties. This is practically prohibition, that will force the use of the drug into greater concealment, and possibly may break up its use in some measure, but cannot be an effectual remedy. The demand for ether as a beverage has existed in certain

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sections of Ireland for at least a quarter of a century. While it never became very prominent it was ascertained that increasing quantities of ether were sent to these and other sections. Dr. Hart gave many facts and statements from which a most reasonable inference was drawn, that ether drinking was slowly increasing in other parts of the British isles. The cheapness and rapidity of narcotic action of ether, and also the rapid recovery from the intoxication seems to have made it a popular drink. Dr. Kerr in a recent paper expresses surprise that it has not spread all over the world ere this as a narcotic drink. One reason is that its manufacture is limited and difficult, and although it can be produced cheaply, unless the demand is prominent manufacturers will not supply it. It is said on good authority that the demand for these cheap methylated spirits has become very active in this country. The strong inference is that it is used as a beverage. Beyond a few cases of chronic alcohol and opium inebriates, who change from one narcotic to another readily, ether drinking seems to be unknown in this country. The spread of this new intoxicant will depend largely on the daily papers. If some unfortunate victim should become prominent and have his history and drink mania written up by the daily press, a large army of neurotics would be attracted to test the drug and use it ever after. Cocaine inebriety became prominent from this source. Hundreds of new recruits to this mania followed the widespread publicity of the history of a poor victim greatly exaggerated by himself and the daily press. Ether inebriety is clearly a threatening peril among neurotics in this country. The only remedy is to treat them as diseased and irresponsible from the beginning. Deprive them of liberty and place them in hospitals under exact medical hygienic and mental care.

THE delirium and stupor from excessive use of spirits should be called poisoning, rather than intoxication. It is literally this, and no other term is more exact.

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Our association is to be congratulated on the effort to bring the study of inebriety more prominently before the profession by monthly meetings in New York. The success of the first two meetings clearly indicates that the profession are ready to welcome every new advance in this field. We are also much gratified to find among leading physicians in other fields less of the old time doubts and denials, and an expectant interest that, at the least, gives new encouragement to all our efforts.

The moralists and reformers have the same old suspicion that in some way we are supported by the dealers of spirits. On the other hand several papers have indicated that our work was simply prohibition and radical temperance effort in disguise. The old charge that our work was simply a personal advertisement, based on a doubtful theory, reflects the ignorance of the accusers, and is not worthy of notice. Our history for a quarter of a century is on record; our work and its influence has passed far beyond the region of doubt, and this last new movement to rouse a wider and clearer interest in the laws and forces which are at the foundation of inebriety can not be checked or influenced by individual opinion or theory. The papers read at these meetings, with the exception of Drs. Wright's, Crothers', and Mattison's, which will appear later, presented in this journal, are sufficiently clear in indicating the possibilities of the future, and the near approach of a great advance of medical interest and enthusiastic research into the malady of inebriety and its treatment and prevention.

A number of excellent papers appear among our exchanges. Some of them preach very clearly righteousness, temperance, and judgment to come, and in the advertising pages teach rascality, drunkenness, and childish credulity. See the opium and whisky specifics, the consumptive and epileptic cures, and the vile books giving the worst kind of misinformation. Also see the offers of many dollars' worth

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of books and goods for a dollar cash subscription to their paper. See also the land schemes, of free building lots, free tickets to some far-away country, where a human paradise is to be planted, etc. Life is very short and human nature is very weak, and the good editors of these papers will wake up some day and find they have been laying a heavy store of wrath against the day of judgment.

DR. CARPENTURE of London, in a recent paper on sanitation, says: "The effect of intoxicating spirits is hereditary and much of the shortening of life is due to this cause. . . . To all nervous and hysterical persons, stimulants and narcotics are, even in small doses, absolute poison. . . . The increase of hysteria and nervous maladies are the legacies from drinking ancestors, and those who have violated laws of health.

DRUNKENNESS in Edinburgh is not a punishable offense. Persons found in this state are arrested for their own protection and released upon recovery. In this country the punishment of inebriates as criminals is thought to be deterring force to check inebriety. The practical result is that the inebriate is educated into a criminal, and becomes a dead weight on the community.

A WEEKLY return of the deaths in London and twenty-seven other great towns of England and Wales, show the highest mortality where the greatest amount of drunkenness prevails. The records of the police court are taken as an indication of the extent of inebriety.

The Cosmopolitan, the new illustrated magazine published in New York city, has already taken rank among the great monthlies of the day. Its contents and illustrations are of the highest quality and character. A year's subscription is only $2.40, and is a most valuable present to any one.

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Clinical Notes and Comments.

LEGISLATIVE CONTROL OF HABITUAL DRUNKARDS.

By T. S. Clouston, M.D.,
Superintendent Royal Asylum, Edinburgh.

The chief points in regard to which the treatment of insanity and the administration of the lunacy acts have special concern are:

1. Will habitual drunkenness be considered and treated legislatively as if it were a form of insanity?

2. Will the measures that attempt to control habitual drunkenness be available for the control of those bouts of drinking that so often cause actual insanity in predisposed subjects, when such bouts can be clearly shown to have caused attacks of mental disease?

3. Will our present asylums be used in any way for the custody and cure of habitual drunkards? And will the machinery provided by the lunacy acts be used in any way for this purpose?

That such legislation might affect this and every other asylum in the kingdom, if it mixed up ordinary mental disease, as we now understand it, and drunkenness, is very evident. No doubt there is a real connection between the two conditions, but there are also differences that seem to me essential, and that should be well considered before legislation takes shape.

The chief points of connection between excessive drinking and insanity are the following:

1. Alcoholic excess is the most frequent single exciting cause of mental disease, and it acts also as a predisposing cause in very many cases. During the past fifteen years we have had 837 admissions, in whom drink has been put down

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as the cause, or 16.4 per cent. of all our admissions during that time. This may be taken as about the general experience of the country. Let us suppose that excessive drinking could have been put a stop to, would all those 837 persons have remained sane? It is certain they would not, but a large proportion of them would have done so. It must be clearly kept in view that such mental disease, so caused, is not "dipsomania," and may have little in common with it, and the proper treatment of such insanity is already provided for under the present laws.

2. Excessive drinking and mental disease are closely connected hereditarily in many cases. The children of drunkards sometimes become insane, and the children of insane people still more frequently become drunkards.

3. The same causes often tend to produce both, and in the same kind of people, viz., those of a too nervous constitution, whose power of control is innately below the average, or whose cravings are above it, of which causes the following may be taken as examples, viz., bad conditions of life, bad air, living too monotonous lives, over-work, over-anxiety, ill-health, injuries to the head, certain diseases of the brain, sunstroke, and in some cases the physiological crises and functions of life.

4. There are some cases of drinking that present some of the very same symptoms as many cases of mental diseases, viz., periodicity, impulsiveness, suicidal and homicidal feelings, loss of the natural feelings of affection towards wife and children and relatives, incapacity to do continuous work, mental or bodily, etc.

5. Many cases of actual insanity are accompanied by the drink craving. For such no new legislation is needed, however. The greater includes the less. In them the insanity is the disease; the excessive drinking is merely one of the symptoms.

6. Above all other resemblances we have this one, viz., that lack of the controlling power is the symptom most common to mental disease and drunkenness, and constitutes

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along with a dominating morbid craving the disease itself in "dipsomania."

7. Mental disease always results from a pathological condition of the brain, and is a true disease, therefore, precisely of the same essential nature as many other diseases, and I think it is proved that habitual drunkenness often also results from a pathological condition of the brain, and is, therefore, in those cases a true disease. It is only when it is such a true disease that it is proper to call it dipsomania. This word is used at present very loosely and inaccurately, and often misleads.

On the other hand, the differences and distinctions between ordinary mental disease and habitual drunkenness, or even true dipsomania, are very marked. The following are some of those practical distinctions:—

1. Mental disease has not so commonly originated in the voluntary actions of persons suffering from it, as dipsomania; that is, much fewer cases of insanity could by any precautionary action have avoided the falling into the disease. Probably far more than one-half of all dipsomaniacs could at one period of their lives have so acted voluntarily as not to have become diseased drunkards.

2. The limited nature of the intellectual damage in dipsomania with the almost total moral damage is entirely different from most cases of ordinary insanity.

3. When the obvious symptoms of mental disease have disappeared under treatment, a certain short reasonable time only of convalescence and probation is needed before the patient can safely resume his work and place in society. He is then "cured" of his disease. But all experience of the dipsomaniac goes to show that a very long period of restriction of his liberty is needed for any possible cure. In him restriction of liberty of action is, in fact, the essence of treatment; while, in the case of the insane man, it is more of an accident, or adjunct of treatment.

4. The two classes don't do well together in the same institutions, and are apt to do each other harm. Nearly all

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the experience of asylum physicians is in this direction. My own experience is so strong on this point that I never now take a true dipsomaniac who is not insane otherwise into the asylum if I can help it.

5. The medical and moral treatment is different in the two cases.

6. The public, and especially the lawyers, instinctively draw a marked distinction between the two, and have always done so. This must be caused by some real difference.

7. Intimately connected with the last fact and the first is the consideration that in regard to mental disease there is almost no room for any feeling but pity; while in regard to excessive drinking the feeling of blame also comes in, and should come in in the majority of cases. The feeling of censure is tonic and good for the patient. A dipsomaniac who does not take blame to himself is not in the hopeful way of cure. Making excuses for himself is commonly a part of his moral disintegration.

8. For the real cure of either habitual drunkenness or dipsomania we need in nine cases out of ten the patient's own determined effort, so far as he is able to put it forth, and his honest wish to be cured. Without that no power on earth will commonly cure him. This does not apply to mental disease to anything like the same degree.

9. 'In any ideal scheme for the treatment of dipsomaniacs and habitual drunkards, work, and the earning of their livelihood while under treatment, stand out much more prominently than in any such scheme for treating the insane.

10. Dipsomania, the real disease, cannot as yet be certainly distinguished from the vice of excessive drunkenness. They often need much the same treatment, and have far more points in common than dipsomania and ordinary insanity. Nearly all sound writers, such as Professor Gairdner, admit this. I certainly can't distinguish between the two in all cases.

I think there are two possible lines on which legislation might proceed in regard to this matter. The one would be to confine the provisions for treating cases to the true dip-

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somaniacs who can be proved to be laboring under a real disease. If this were done, I think certain of the provisions of the lunacy statutes might be used. Notably for supervision the commissioners in lunacy might be available. But even then I should be most adverse to the present asylums being used as places of treatment, except in the limited class of cases to which I have alluded, where there has been a previous attack of actual insanity, and excessive drinking has been proved to have caused it, or to be essentially connected with it.

The other principle on which legislation might proceed would be that advocated by Professor Gairdner and others, viz., that as the distinction between diseased drinking and mere vicious indulgence is an "all but impossible distinction," and that it is in fact, "merely an academical question whether such an (incorrigible) drunkard is to be regarded as technically insane or not." Therefore it becomes "an expediency of the highest kind in respect of the victim himself and his family" to institute "a measure of legal restraint" to the otherwise incorrigible drunkard as such.

In Mr. Morton's bill the patients to be treated and reformed in the "Restorative Homes" proposed to be established are described as laboring under "a special form of mental disorder, the chief distinguishing features of which are excessive and secret indulgence in intoxicants, the craving for which is more or less persistent, or occurring in fits with remissions at intervals of time, and a marked change in the mental powers and moral character." This would open the door to contention in every case, whether it really came under the definition, while Professor Gairdner's scheme would avoid that. He, too, very properly urges that some more responsibility should be fixed by the new legislation on the sellers of drink in every case where intoxication has resulted from such sale.

I am greatly concerned that, whatever principle is adopted in future legislation in regard to the restraint of drinking, the 400 cases who year by year in Scotland are made actually insane by drink shall in some way be considered and

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provided for, as well as the ordinary habitual drunkards. For their own sakes, and for the sakes of the rate-payers who have to pay for the process of cure in such cases, it is desirable that they should be prevented from obtaining the poison which has already upset their brain working. It should be made a penal offense to sell drink to any man who is known to have ever suffered from an attack of alcoholic insanity. It is yet doubtful how many dipsomaniacs and habitual drunkards can be cured; but it scarcely admits of any doubt that much insanity might be prevented were the facilities and temptations to drink to excess diminished, and drinking made a reasonable adjunct of social life, instead of the mere solitary gratification of a base appetite. — *Seventy-seventh Annual Report of the Royal Edinburgh Asylum for the Insane.*

STIMULANTS AND WORK.— Different people will read with very different emotions of a plan of living by which the capacity for work may be rendered "almost unlimited." In the first place, a cynic philosopher has said that "leisure is the end of existence;" and in the second place, the means by which this illimitable power of work is to be attained involve the use of a drug belonging to the class which used to be called stimulants, but which it is now the fashion to call narcotics. Dr. J. N. Lane has published the result of his own experience; he recommends a cup of strong black coffee, without cream or sugar, preceded and followed by a glass of hot water, every morning before rising, or at least one hour before breakfast. The various secretions are thus stimulated, the nerve force aroused, and the day's labor rendered easier, no matter how the duties of the preceding day and night may have drawn upon the system. Another cup at four in the afternoon is, he says, sufficient to sustain the energies for many hours. Only recently, however, we commented on a paper by Dr. Mendel, describing the very injurious effects which an over-indulgence in coffee produced — general weakness, depression of spirits, aversion for labor,

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headache, and insomnia. Upon Dr. Lane's plan, somewhere about fifty grains of caffeine would be taken in each week, and the largest quantity noted by Dr. Mendel was sixty four grains, so that it would seem that the power of doing an illimitable amount of work is obtained only at the cost of going dangerously near the poisoning point. — *British Medical Journal.*

NOTES UPON SOMNAL, THE NEW HYPNOTIC.

By Frank Woodbury, A.M., M.D.,

Fellow of the College of Physicians of Philadelphia; Hon. Professor of Clinical Medicine in the Medico-Chirurgical College, etc.

Last fall Radlauer,* of Berlin, brought to the notice of the medical profession a new compound to which he gave the name of Somnal, in acknowledgment of the remarkable hypnotic properties which it appeared to possess. It was formed by the union of chloral, alcohol, and urethane, according to the original notice,† but is not a simple mixture of these bodies. It differs from chloral-urethane by the addition of C_2H_4, its formula being $C_7H_{12}Cl_3O_3N$. The method of manufacture is by direct combination of chloral alcoholate and urethane in a vacuum apparatus, according to its discoverer, who states‡ that its composition might be graphically represented thus:

$$\begin{array}{l} \qquad\quad OC_2H_5 \\ CCl_3—C—H \\ \qquad\quad NH\,CO\,O\,C_2H_5. \end{array}$$

Specimens of this new hypnotic having, through the courtesy of Messrs. Eisner & Mendelson Co., been placed in my hands for examination and trial, I will here very briefly communicate some of the results thus far obtained, reserving my final judgment upon the drug until experience has been more extended.

Physical Characters. — Somnal is a colorless liquid, resembling chloroform in its appearance and behavior when

* Zeitschrift des Apothekers-Vereins, Nov., 1889.
† Journal de Médecine, Oct. 20, 1889.
‡ Pharmaceutical Journal and Transactions, Nov., 1889.

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added to cold water, in which it forms globules and refuses to mix or dissolve. When shaken with water, the mixture is milky, but quickly separates. It is soluble in hot water and alcoholic solutions, and dissolves resinous substances and fats. The odor is faint, not very penetrating or disagreeable, and resembles that of the spirits of nitrous ether, or recrystallized chloral. The taste is very pungent; and for administration it needs free dilution. It may be given with whisky or solution of tincture of zingiber or syrup of licorice. Somnal is inflammable, burning with an alcoholic flame; it does not evaporate quickly, and leaves a greasy stain upon blotting paper. Specific gravity greater than water; reddens litmus paper slightly.

Physiological Effects.— In its action it resembles chloral in quickness of effect and naturalness of the sleep produced. No marked depressing influence was exerted upon the pulse or respiration rate, though it was noticed that the breathing became slower and the pulse slower and fuller as in natural repose. No disagreeable after-effects. The head was clear and the stomach was unaffected; the patients generally had an appetite for breakfast. No constipating effect. The kidneys acted rather more freely than usual. My colleague, Dr. Ernest Laplace, to whom I gave some of the drug for trial at the Philadelphia Hospital, writes as follows:

"I have given somnal a fair trial upon six patients at the Philadelphia Hospital. In no case were the patients told what was given them, so outside of the bare possibility of the patients' falling asleep through natural causes, somnolence was brought on by the drug. It was administered in a solution of tinct. zingiberis, in half-teaspoonful doses, and was found palatable.

"Administered at 4 P. M., at a moment when patients were not generally asleep, in four cases sleep came on within half an hour, which lasted from five to eight hours; the two other cases showed no effect from the drug. It is their habit to get at least gr. ¼ of morphine sulph. to put them asleep

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every night, as they are sufferers from intractable malignant growth.

"In no case was there any noticeable after-effect.

"I have not formed any opinion upon the length of time that the drug could be used daily upon the same patient.

"To this I might add that no depression of the normal temperature was noticed in any case in my hands, and thus far I have not used it in pyrexia."

Therapeutic Application. — The effects of somnal in producing natural sleep suggested its use in insomnia. The first case in which I used it was in a patient suffering with acute alcoholism, who had been under treatment for a fortnight in an institution where he had a free supply of liquor, and he came out rather worse than he went in. He was 39 years of age, very tremulous, and could not sleep, or if he dozed off would immediately wake up. I gave him, at about 3 P. M., thirty minims of somnal (or rather a drachm of a mixture of equal parts of somnal and whisky), well diluted, and went into an adjoining room to speak to an attendant. Upon my return I was surprised to find him fast asleep, although I had not been away from him more than fifteen minutes. He slept for four hours, and then was able to take something to eat. At 10 o'clock he had another dose and he slept until seven the next morning, having waked up once only during the night and insisted upon having another dose, and immediately after taking it he fell asleep again. The next night he was given a double dose at 10 P. M., and he slept all night without wakening. No bad effects were observed. The somnal was given for four nights, when he was so nearly well that it was suspended, as he had good natural sleep at night and seemed quite restored. Alcohol was positively prohibited, the only substitute allowed being Elixir of Coca and Camellia (P., D. & Co.), in tablespoonful doses, in which it is true there was a small amount of alcohol, which was quite infinitesimal when compared with what he had been using. Somnal, therefore, acts well as a hypnotic in acute alcoholism as a tranquilizer and hypnotic.

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In a case of neuralgia of the bowels (visceral neurosis of Allbutt), where the patient had a sleepless night, a dose of twenty minims relieved nausea and pain, and the patient fell asleep.

In syphilitic headache and insomnia, somnal in moderate doses failed to produce sleep, which was afterwards secured by potassium bromide and iodide, and antipyrine.

In cases of insomnia, fretfulness, and restlessness in young children, somnal with mint water and syrup offers better results than opiates, and is much safer. The same remark probably applies to the use of somnal in acute pneumonia, but I have not been able to confirm this yet by actual trial.

Without further going into detail it may be stated in conclusion that somnal acts as a hypnotic, but instead of depressing the system as chloral does, it slightly stimulates the gastric mucous membrane, relieves nausea and pain, improves the appetite, increases secretion (probably), does not cause constipation. The circulation, respiration, and temperature are not notably depressed after its administration. No disagreeable after-effects have been observed. As it is rapidly eliminated from the body it may be administered each night for a number of days without any obvious ill-effects. It acts very much like chloral, but is more pleasant to take and not so depressing in its effects upon the nervous system and the circulation.

The *Pharmacology of the Newer Materica Medica*, published by G. S. Davis of Detroit, in monthly parts, is an exceedingly valuable contribution to this subject. It is the only publication of this kind published. The price is only two dollars a year.

The *Bacteriological World* is a new monthly, devoted to the study of micro-organisms. The first number is very promising, and all who are practically interested in this field will find this journal indispensable. Send to Dr. Turner, Mexico, Mo., who is publisher.

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SOME NOTES BEARING ON THE ADMINISTRATION OF IRON.

By JOHN AULDE, M.D., PHILADELPHIA.

Although iron is highly esteemed as a medicament, and is largely used for its tonic effect upon the system, so frequently does it occur that the patient objects, owing to some idiosyncrasy or fancy, that we cannot regard it wholly as an ideal hæmatinic. No apology, therefore, is required in offering to the profession a comparatively recent preparation which is free from some of the objections that have been urged against many of the iron preparations now in use. In order to make the reasons which I have to offer clear and distinct to the casual reader, I have deemed it wise to consider briefly some points intimately connected with the pharmacology of the drug. From this preliminary study we shall be in a measure prepared to estimate how nearly the new product comes to meeting the defects with which we have had to contend so long, and at the same time it may possibly lead to a more intelligent use of this well-known remedy. Besides the reduced iron, we have in general use the *ferric and ferrous* preparations, the latter being more mild, less astringent, and free from the objections to the ferric salts — that of coagulating albumen. Lethal doses of the ferric salts used intravenously in experimental investigations cause almost immediate paralysis of the central nervous system, fall of blood pressure, and death. Although the perchloride, when thus used, causes instant death by coagulation of the blood, it does not act in this direct manner when introduced subcutaneously; the nerves are unaffected, but at the points of elimination inflammatory action is set up, *e. g.*, the kidneys, liver, and intestinal mucous membrane show more or less effect.

Absorption takes place as a peptonate or albuminate, but it is taken up so slowly that no appreciable result follows,

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unless, as just stated, it be used intravenously or subcutaneously. Absorption takes place more rapidly in catarrhal conditions of the intestinal tract, a fact to be borne in mind when exhibiting large doses, which cause gastro-intestinal catarrh. Small doses do not have this effect, nor does the metal appear in the urine from their administration, such as may be observed after the ingestion of large doses. It will be inferred from the foregoing that, by the exhibition of small doses of a soluble preparation of iron, it will be assimilated without causing derangement of the alimentary tract, and in this way the secondary effects — *i. e.*, the deposit of the metal in the system — may be avoided.

The fact should be kept constantly in view that metals have a poisonous action upon nerves, nerve centers, muscles, and upon all glandular structures; and as iron is a reputed hæmatinic, much harm may result from its injudicious employment, as there are evidently certain toxic effects following the long-continued use of insoluble preparations. This is a rule which applies especially to all insoluble iron preparations, and it is but reasonable to assume that whatever harm has been done through this means may have escaped attention, because few physicians are likely to investigate the presence of factitious diseases. Another factor which has contributed to lessen these evils is the slow process of absorption.

The foregoing observations apply with equal force to the effects of the drug upon the circulatory apparatus. While copper is an active agent in causing contraction of the blood vessels, iron produces slow contractions, showing that it is less irritant (stimulant) to the nervous system. This may possibly be accounted for on the hypothesis that iron is a normal constituent of the blood. Whether this effect is due to irritation (stimulation) of the vasomotor nerves — central or peripheral — or to a direct action upon the muscular walls of the blood vessel, is a question still in doubt. My own impression is that through the influence of the medicament upon the nerve cells, the large doses (comparatively)

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arrest their function when contraction of the muscular structures in the vessels takes place. The ferric salts, owing to their property of coagulating albumen and blood, of course produce more marked effects than the ferrous salts. Digitalis and ergot among the organic, and barium chloride among the inorganic remedies, well known as vascular tonics, furnish apt illustrations of this important principle.

The effect of iron upon muscular structure has long been known to experimental physiologists, but I doubt if this knowledge is appreciated by many practitioners, who regard the possible benefits to be derived from the exhibition of iron preparations in proportion to the amount tolerated by the patient. Now, large doses, while they do not affect the irritability of muscular structure, lessen materially the amount of work it is capable of performing, while small doses increase the capacity of muscle for work. What is most to be desired, therefore, is a preparation not open to the objections inferred from these investigations; but owing to the necessity for consulting the palate of our patients, it is also desirable that the substance should be free from the nauseating effects which are so common to all preparations of iron. This combination I believe is to be found in that form known as levulose ferride, which was highly recommended to me several years ago by my friend, Dr. James Collins of this city.

Iron has a tendency to accumulate in the liver; small doses do not show this tendency, but they may serve to increase the functional activity of this organ, when given in a soluble, non-astringent form, by restoring cell nutrition to the normal.

The preparation known as levulose ferride is one which takes the place of a well-known and popular German product called Eisenzucker (iron sugar), very extensively used in domestic practice. I was led to the employment of iron sugar on account of its palatability, fastidious patients and children making no objections to it; but this has been supplanted by levulose ferride, which, in the form of tablet trit-

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urates, will be taken as readily as chocolate bonbons. It is readily soluble in an excess of water, and practically free from any ferruginous taste or styptic effect when dissolved in the mouth, and is substantially a peptonate. The method of preparing is, briefly, as follows: To a certain amount of iron a measured quantity of malt-sugar (maltose?) is added and the mixture constantly stirred while exposed on a water bath. While it possesses all the desirable qualities mentioned, the presence of metallic iron may be determined by chemical analysis, the strength of the product being about three per cent.

This preparation, it will be apparent, will act much less actively as an astringent than even the ferrous preparations, but of course it cannot be expected to take the place of the ferric products which are sometimes demanded, as in the case of intestinal parasites (sarcina ventriculi and lumbricoides). On the other hand, it will be especially indicated for the relief of anæmia and chlorosis, owing to its ready absorption, lack of astringency, and its palatability. In all cases of defective nutrition from any cause, where the ingestion of any form of medicament is a trial to the patient, this product will be kindly received. A synopsis of some of the cases in which it is indicated, together with a summary of the effects following its employment, may prove interesting to the physician.

During the early summer months I had under observation a young mother with a six-months-old child, who presented a very anæmic condition. I had seen her but once since the delivery of her child, and anticipating that she would not be able to nourish it sufficiently and maintain her health, I had cautioned her in regard to the most appropriate diet. Notwithstanding every care had been used, she was finally compelled to seek medical aid or go to bed. All that this patient required was something for the purpose of increasing the amount of hæmoglobin, which would restore the integrity of the red corpuscles and improve the oxygen-carrying capacity of the blood. This being most readily

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accomplished by levulose ferride, she was ordered to take tablets of this preparation, each containing three grains, after meals. To meet the emergency and increase the patient's strength until such time as the advantages of the iron would be apparent, small doses of strychnine ($\frac{1}{60}$ grain) were administered along with the iron. Ordinarily this class of patients, when they begin in the early summer, suffer more or less from the effects of the heat, and become regular patrons of the doctor; but this patient did not make her appearance again for about two months, when she said she thought it was about time to have a little more of the same medicine. I may mention in passing that the first medicine was sufficient only to cover the first ten days, and the patient seemed greatly disappointed that she was compelled to return.

So many children are so promptly benefited by the use of a small quantity of iron, that it is a great drawback to us that no palatable preparation has been discovered and put on the market. I have in mind a little fellow who has long been very much averse to eating meat, due, I presume, to defective digestion, but for the past few weeks, since he has been taking the levulose ferride, he seemed quite content to eat meat alone, and is becoming strong and robust. Not long ago I had a visit from a lady, who brought with her a young lad, age fourteen, who had a most forbidding, cadaveric expression, and he could eat no meat. His brother, I was told, had died at about this age from Bright's disease, and this one presented all the symptoms peculiar to the brother who died. Still, with attention to diet, outdoor exercise in the country, and a tablet triturate containing three grains of levulose ferride after meals, he made a prompt recovery. Although I was unable to discover any symptoms of Bright's in this instance, I was impressed with the depression due to the anæmic condition; and yet, without some readily assimilable iron preparation, it would have been a tedious process to start him on the way toward recovery.

Late in the spring of the year a gentleman, age about

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thirty-five, called on me, complaining of dyspepsia, although he had been under the treatment of another physician for overwork for the preceding four years. After regulating his diet, and adopting treatment calculated to restore the activity of the digestive apparatus, he was placed upon levulose ferride along with strychnine sulphate (3 grains of the former in tablet form, and $\frac{1}{60}$ grain of the latter), and did remarkably well on this combination. This product, like all other mild preparations of iron, is mostly indicated in cases of this class, and along with these may be mentioned chorea, convalescence from lingering diseases, like typhoid fever, and in all such instances I venture to anticipate that the results will be especially favorable where proper attention is given to dietetic measures.

The administration of the remedy may be confined to the use of the powder, which is taken dry on the tongue, dissolved in water or coffee, or it will be found more convenient in the form of tablets, each containing three or five grains. The dose for children ranges from three to ten grains, and for adults from five to thirty grains. — *Medical Record.*

ALCOHOL ON THE TEETH.

Dr. McEhlewney of Ottawa, Canada, writes to the *Woman's Journal:*

Alcohol is an active irritant, especially when brought into contact with such sensitive mucous membranes as those found lining the mouth, throat, and stomach. The first contact may not produce a serious result, but when the applications are continued from time to time, irritation is increased until the vitality of the parts become impaired, and then the irritation is self-sustaining, developing chronic inflammation. The effects of alcohol on this now chronic inflammation are disastrous in the extreme, the functions of the surface becomes impaired, and the secretions vitiated, leading to various and complicated disorders of the whole system. This, in

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general terms, is the action of alcohol upon the stomach, mouth, and throat.

It is well known that there is a nervous sympathy between the stomach and the teeth, and between the mucous membrane of the mouth and throat and the stomach.

When the stomach is disordered by alcohol, the pulps, or what are commonly known as the nerves of the teeth, become congested and liable to inflammation, this being aggravated by the irritated and unhealthy state of the mouth, soon culminates in disease and death of the pulp. The teeth being robbed of that which supplies their nourishment and vitality, decay with great rapidity. Abscesses form on the roots and the whole mouth becomes the seat of active disease.

Nor is this process a painless one, for the nerves that supply the teeth are derived from the trifacial or fifth pair which also supplies a number of the muscles of the face and the sense of taste.

Herein lies the key to the excruciating neuralgic pains, contorted face, and impaired sense of taste that is the common lot of the poor inebriate.

Dr. Nims, Superintendent of the Northampton Lunatic Hospital, remarks as follows on hospital treatment: "The man who lives beyond his income soon becomes bankrupt; so the man who expends his strength and vitality faster than he lays it up in store soon fails in health, physically and often mentally. It becomes an important question, then, in the treatment of insanity as well as in other disorders, how to preserve and restore the normal balance between the outgoing and incoming energies of the body. We cannot expect to overcome at once the morbid tendencies which are the result of unfavorable influences extending back through generations. We may not restore to soundness the organs which are structurally diseased, but we can, and often do, bring about more healthful conditions, and place the patient on the road to recovery.

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"The medical service in a hospital has special advantages, inasmuch as the patient is under the direct supervision of the physician. Any case of illness may receive immediate and as frequent attention as the conditions demand. The administration of medicine is under his complete control. He can regulate the surroundings of the patient as to sanitary condition, diet, nursing, exercise, and occupation. The abridgment of personal liberty brings a very strong influence to bear upon the patient. The regularity of hospital life and discipline and restraint are often serviceable in correcting those eccentricities and peculiarities which the insane are so liable to fall into, and lead to the formation of habits which are necessary to physical and mental health.

"The opprobrium of hospital treatment is the small percentage of cures which are effected. It is unquestionably true that in the light of present medical knowledge a large proportion of the cases admitted to the hospitals are incurable when admitted. The entrance to the hospital is often the last resort, after all other known means of cure are exhausted. When the best efforts of medical skill have failed, and when the round of moral treatment has lost its charm, the patient comes to the hospital for help. Can it be wondered at that the last experiment so often fails? Yet statistics and experience show that the conditions of hospital life are peculiarly efficacious in benefiting and restoring to health thousands of cases which come under its supervision and care, and upon this must we rely until science shows us a better way."

WHERE are our young men to-day, and what are they in character? In Washington are 30,000 young men, but less than 3,000 of them are members of the churches. On a single evening 168 young men entered ten church prayer-meetings, and the same evening, in one hour, 365 entered ten of the 1,000 saloons licensed by our government under the shadow of the Capitol. In a city of 17,000, 1,021 young

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men entered forty-nine saloons in one hour, and in another city of 38,000, 600 young men were found in seven of twenty-eight saloons in one evening. In Leadville, Colorado, on a recent Sunday evening, 250 young men attended eight churches, and 2,000 entered six of the seventy-six saloons of the city. In Providence, R. I., on an evening not long since, 354 young men entered five of the 100 saloons of the city in two hours. Evansville, Indiana, has 237 saloons, and on a recent Saturday evening 450 young men entered four of these saloons in two hours. In Carlisle, Pennsylvania, in three hours on a certain evening, 1,358 young men entered eleven saloons. Our young men do not march in force toward the doors of the sanctuary, but in fearful numbers they are marching toward the saloon dens of death.— *Boston People.*

TORONTO SANITARIUM. — FOR THE TREATMENT OF ALCOHOL AND OPIUM CASES.

THE Toronto Sanitarium Association, chartered over a year ago by the Ontario Government as a joint stock association, have secured the site for their institution, which will be the first of its kind in Canada for the treatment of narcomania. Though the undertaking is of a philanthropic character, its basis is commercial. A number of such institutions in the United States have obtained most satisfactory results in the treatment of persons suffering from the effects of alcohol, opium, morphia, cocaine, chloral, etc. The victims of these narcotics are diseased, and their disease will, it is held, succumb to treatment just the same as any other form of disease. The Toronto sanitarium will be situate at Deer Park in the late residence of Mr. George Hague. Grounds three acres in extent are attached and will be laid out in the most approved style of landscape gardening. The house, before being fitted up for its new use, will be enlarged to more than twice its present size. The company have a capital stock of $50,000, enough of which is subscribed to insure the success of the enterprise. The institution will be

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ready for the reception of patients at an early date. The following are the new board and officers:

Board of Directors.— Ald. Gillepsie, B. H. Dixon, K.NL., Hon. Charles Drury, Hon. S. H. Blake, N. W. Hoyles, H. O'Brien, W. G. Storm, C.E., Stapleton Caldecott, R. Kilgour, D. W. Alexander, T. J. Wilkie, J. A. Carlaw, C. S. Elliot, George Hague, Kingston; George Foster, Brantford.

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Executive Committee, Messrs. Gillespie, Storm, O'Brien, Alexander, Wilkie, Carlaw, and Elliot.

Medical Superintendent, Dr. C. Schomberg Elliot.

DRINK AND MURDER. — A whisky drinker will commit murder only under the direct excitement of liquor; a beer drinker is capable of doing it in cold blood. Long observation has assured us that a large proportion of murders, deliberately planned and executed without passion or malice, with no other motive than the acquisition of property or money, often of trifling value, are perpetrated by beer drinkers. We believe further that the hereditary evils of beer drinking exceed those proceeding from ardent spirits — first because the habit is constant and without paroxysmal interruptions, which admit of some recuperation; secondly, because beer drinking is practiced by both sexes more generally than the spirit drinking, and thirdly, because the animalizing tendency is more uniform, and the vicious results are more generally transmitted. — *Pacific Medical Journal.*

Parke, Davis & Co. have put on the market a new preparation of great value. It is called *Mosquera's Beef Meal*, and is a perfectly pure, predigested meat, containing all the nutritious constituents of good lean beef, half of which are in soluble form, ready for immediate assimilation, and the other half easily digestible by the gastric and pancreatic

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juices. Therefore the entire preparation, being practically dry, is composed of nutritive matter, containing about 40 per cent. of soluble peptone and albuminose. It represents, in actual nutritive value, at least six times its weight of good lean beef. It is perfectly palatable, and will be tolerated with ease by the most delicate stomach. It admits of being administered in a variety of forms, thus avoiding monotony in the food. It is the most nutritious, as well as the most economical, concentrated food.

Bromo Potassa, prepared by W. R. Warner & Co., is one of the best and most palatable preparations on the market.

The Lactopeptine is a standard remedy, and has no rival on the market.

The *Bowden Lithia Water*, containing *Bromide*, promises to be more valuable than supposed at first. It has proved already to be a superior remedy in diseases of the stomach and kidneys. Send for a sample bottle.

The Victor Safe and Lock Co. will send a fine safe to any one for a small price compared with other safes. Send for a pamphlet.

Horsford's Acid Phosphate has become a traveler's remedy. Persons going abroad should not fail to carry a supply with them ; it will be invaluable.

Antikamnia is a new analgesic of marked value. We have used it in headache and neuralgia with the best results.

Bromidia is combined with Iodide of Potassium, and forms an excellent syphilitic remedy for cases of long standing.

The Monist, a new quarterly, is welcomed for its clear discussions of *Philosophy*, *Religion*, *Science*, and *Sociology*. Send to Open Court Publishing Co., Chicago, Ill., for a copy.

Phenacetine and *Sulfonal* are two most valuable hypnotics. In our experience, Schieffelin & Co.'s preparations of these remedies are the most reliable and uniform in their action. A fair test of the merits of these drugs can not be made unless this firm's preparations are used.

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ALCOHOLIC INEBRIETY A CONSIDERATION OF THE SYMPTOMATOLOGY WITH REFERENCE TO THE PATHOLOGICAL ANATOMY.*

A. B. RICHARDSON, M.D.

Cincinnati, Late Medical Superintendent Athens Asylum for the Insane, Athens, O.

For convenience of description, and to impress the points which it is desired to discuss in this paper, I have thought proper to divide the subject into four parts, or, in other words, to consider the disease under four forms.

These four forms or stages are: the status inebriosum, or inebriate state; acute alcoholism, which includes both mania à potu or mania ebriosum and delirium tremens; chronic alcoholism; and an intermediate form which has many of the characteristics of the latter, but in pathological anatomy and in prognosis resembles the acute form.

It is not possible, within the limits of one essay, to give

*Read at the February meeting of the American Association for the Study and Cure of Inebriety, in New York city.

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an exhaustive description of these forms. The object here will be to limit the review to those features of the disease which have a significance as indicating the seat and nature of the pathological changes.

It will be seen at once that the outline given includes a larger territory than that covered by alcoholic insanity. This is done purposely, and indicates the reason for the use of the term alcoholism instead. Many cases have great interest, psychologically, to the medical profession, and embrace features which it is our duty most carefully to consider, in which the condition of insanity has by no means been reached, and, as we shall see in a consideration of the chronic form, even there are cases where this classification is scarcely justifiable.

Were I to distinguish any one of these four forms of the disorder as being more important than the others, with greater claims upon us for recognition and careful study, I should name the first. It is that variety in which our efforts give more promise of successful results, and is, besides, far more widespread and more inimical, though more covert, in its influence upon the social organization.

The status inebriosum may be considered to exist in any habitual or periodical user of alcohol as a beverage, when a continuous nutritional modification has been developed in the brain cells, manifesting itself by recognizable and characteristic clinical symptoms. It has no recognized pathological anatomy, though there can be no doubt that the clinical manifestations depend upon a pathological tissue change as characteristic of the disease as are these outward evidences.*

In the mind-developing areas of the cerebral cortex, the most vulnerable point to the influence of alcohol are the brain cells. The circulation of even a small quantity of alcohol in the blood modifies the functional activity of the cell, and

* Some authors, notably Clouston of Edinburgh, speak of this stage as that of alcoholic degeneration, meaning, more especially, a degeneration depending upon alcoholic indulgence, exhibiting itself in physical degeneration, rather than in evidence of physical disorder.

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therefore, for the time being, at least, disturbs its molecular arrangement. Long before any change can be detected by the microscope either in the cell, the connective tissue or the blood vessels, this nutritional modification and consequent molecular change has become continuous, and is removable only by a prolonged abstinence from alcohol.

The exact nature of this molecular change cannot, of course, be determined, but there can be no doubt that it is directly connected with the processes of waste and repair in the cell; while the great similarity of the symptomatology at all stages of the disease permits us to infer that the underlying tissue change in this early stage is similar in character to that which we see in the more advanced stages.

As before stated, the modification in nutrition is not dependent upon the actual presence of alcohol in the blood, but is continuous, and remains for a variable and comparatively prolonged period after the cessation of its use. The existence of this change is shown by a group of symptoms highly characteristic of the effect of alcohol on the mind-forming tissues in all stages of this influence, and relate to the motor and sensory area, as well as the psychical.

The first evidence of this nutritive change is shown in a change in the affective characteristics of the individual. The most delicate and complex functions are the first to suffer. As Maudsley has so admirably put it: "In undoing a mental organization, nature begins by unraveling the finest, most delicate, most intricately woven, and last completed threads of her marvelously complex network."*

There is, so to speak, a denudation which extends to varying depths of reduction.

In this disorder the first degree of the reduction takes off merely the apices of the prominences in the character-developing areas. Before any mental symptoms become evident, and before the motor and sensory disturbances can be de-

* While alcohol cannot be likened to any process of nature, the changes it induces do bear much resemblance to the normal involution which proceeds with advancing age.

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tected, the alcoholic influence is noticeable in a change in the moral qualities of the individual. There is a coarseness in his moral nature. He loses the fine sense of honor and the regard for duty which he once possessed. There is growing disregard for the rights of others, and a loss of that inhibitory force or power of resistance which formerly controlled his desires and gave direction to the motives which lay behind and enforced the activity of his will.

Gradually, this change in moral qualities extends to the purely mental faculties, and the individual begins to show a lack of energy, a feebler innervation, an inability to readily concentrate the attention, and usually more or less impairment of the mental faculties. With these mental symptoms there is a sensory and motor irritability and commencing unsteadiness which shows itself in disorders of general sensation and of the special senses, tremulousness, lethargic movements, and diminished power of endurance. The chief characteristic of both the mental and physical symptoms is the condition of irritability and the explosive and impulsive tendency which is manifested more decidedly in the later stage and more active forms of the disorder. They are the forerunners of these, and show its dangerous character. This is the condition from which crimes against the social organization are so readily evolved, and should serve to remind us that we are, in a very practical sense, the guardians of the public morals, as well as of the public health.

Let us remind you again of the strong tendency of the disorder to extend to the sensory and motor areas of the cortex. It is highly characteristic of the effect of alcohol upon the centres of the pure mental functions, and, as we shall see, has a plausible explanation in the pathological anatomy of the chronic form.

Whether this condition will go on to the more fully developed disease, or remain more or less stationary or entirely disappear, will depend upon the environment of the patient and the inherited or acquired tendencies of his brain activities; or, in other words, to the depth of the grooves which

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have been channeled out, or existed naturally, in the cerebral cortex — represented in habit and predisposition. The victims of alcoholism, which goes to the degree that justifies the designation of alcoholic insanity, do not possess the insane inheritance to so great a degree as do the sufferers from other forms of insanity. Of 344 cases analyzed by Dr. Bevan Lewis, of the West Riding Asylum, Waterford, England, 27 per cent. had the history of insanity among their ancestors. Including epilepsy, all other neuroses and parental intemperance, about 37 per cent. showed the neurotic heritage. It is scarcely to be expected that this form of disorder of mind, so much influenced by environment, education, and the transmission of social customs, should show as large a proportion of cases of insane inheritance as do the more permanent and more distinctly racial forms; but that 27 per cent. show the neurotic taint so decidedly as in the possession of an insane ancestry, should direct the attention of all medical men to a study of the subject of alcoholic intemperance with renewed scientific interest and a broader sympathy for its unfortunate victims.

No figures can be given which are at all reliable as to the length of time which will elapse after these evidences of nutritional modification have been noted before the more active disease is developed, or the organic changes reach such a prominence as to justify the diagnosis of the chronic form. The progression may be gradual into the latter stage, the symptoms developing one by one, or there may be a sudden explosion into the form of acute alcoholism, or acute alcoholic insanity. It is well always to bear in mind that the patient is in the dangerous condition of the incipient stage, and that an explosion may occur from any slight additional indulgence or moral shock.

It is not my purpose to go in detail into a description of the symptoms of acute alcoholism. They embrace varieties of mental, sensory, and motor phenomena, and in each variety display the same impulsive and explosive tendency which was seen in the prodromic stage. In the mental area

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this is quite pronounced. If the form is -mania, there is a dangerous aggressiveness and a tendency to impulsive outbreaks which renders it one of the most treacherous and dangerous forms of mental disorder with which the alienist has to contend. If the form is that of melancholia, there is a dangerously suicidal propensity, and the same uncertainty in prognosing the course of the symptoms. One hour they may seem in abeyance, while in the next they return with renewed force and severity. No less than 50 per cent. of the cases of alcoholic melancholia have pronounced suicidal tendencies. In the chronic forms even, when the brain is in the condition of atrophy and the mental symptoms show an advanced stage of dementia, the suicidal and homicidal tendency continues and is actually increased in intensity. Sixty-six per cent. of these cases were determinedly suicidal, and 83 per cent. possessed dangerously homicidal propensities.

The sensory areas show marked disturbance. Illusions and hallucinations are invariably present, and are usually of a most distressing nature. They are active, fleeting, and what is peculiar to this form of mental disorder, conspicuously invade the nerves of general sensation and of the visceral system. Tingling, pricking, and burning, local anæsthesia and numbness, electric shocks and all sorts of visceral sensations are experienced and give rise to the most extraordinary and diverse delusions in the attempt of the patient to account for the mysterious sensations. These delusive ideas, however, are as fleeting as the illusive sensations which produce them. In the varieties of which delirium tremens is the type, motor symptoms are a prominent feature and display the same irregularity, irritability, and explosive tendency which characterize them throughout the disease.

These acute symptoms, under appropriate treatment, and particularly if the attack is the first, will usually rapidly subside and disappear entirely within a few days, leaving the patient apparently in the same condition as before the out-

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burst. This is the usual course, but here also the modification in the nutrition of the brain cell and its molecular disturbance, of which the symptomatology of the prodromic form so loudly spoke, are seen, even more clearly, in the strong tendency to relapse which these cases show. Long before structural change can be detected in the cell, this nutritive perversion induces such an instability and irritability that its functional capacity is greatly modified. Several relapses may occur even before the patient is in condition to be discharged from treatment, and after every new attack following apparent recovery this relapsing tendency becomes more pronounced. These relapses are not always dependent upon the presence of alcohol in the brain and may occur months after the excess which caused the first attack. Thus in one case, mentioned by Bevan Lewis, four distinct relapses occurred during one year, while the patient was in the asylum, and entirely free from the ingestion of alcohol, each attack exactly reproducing the symptoms of the first disorder. In another instance, after a first attack, dependent directly upon alcoholic excess, and from which the patient recovered in a short time, there elapsed a period of nine months during which there was no evidence of mental disorder, yet, after attendance on a series of Salvation Army meetings, there was a violent outbreak of mental disturbance which "reproduced what was previously engendered as the direct result of excessive alcoholic indulgence," showing that "whatever are the centers of the brain, which are prone to disturbance through the agency of alcohol, when once their nutritive equilibrium is upset seriously by this agency, these centers are prone to suffer first in any relapse, whatever be the exciting cause." Could any fact be more significant, or impress more forcibly the necessity of recognizing the influence of this nutritive change and of keeping it constantly in mind in advising as to the future treatment of these patients? The care of this class during the prodromic period, and in the intervals of their acute attacks, should receive more careful study from the medical profession. Sentiment is not the

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influence to which I would appeal, but the treatment should be outlined on strictly scientific lines and with the molecular modification of their brain cells constantly in mind. It does not follow that this treatment should be medicinal alone; that would be taking a very contracted view of mental therapeutics. Medicinal agents are of value in most cases, but they must be supplemented by adjustment of environment, re-education of defective faculties, cultivation of corrected motive and direction of desire into the proper channels, all of which are as rightly within the province of the physician, and as vital to his successful management of these cases as is a study of the influence of any agent of the materia medica.

This subject is one of such great importance, that I trust I may be pardoned this short digression from the main subject of the essay.

Instead of subsiding promptly and completely, this condition of acute alcoholism may either continue for a considerable period in a more modified form with a diminished intensity of the symptoms, but with a greater impairment of mental capacity, resembling secondary dementia and sometimes amounting to a condition of stupor, and from which the patient slowly recovers only after a period of several weeks or months, or it may pass into the chronic form with permanent mental change and gross organic lesion of the cerebral cortex. The latter course, however, is quite unusual after a first attack, and is seldom induced until repeated outbursts have seriously affected the quality of the blood and the carrying capacity of the blood-vessels of the brain, and greatly increased the interference with the nutrition of the brain cells.

It is the fact of the not infrequent termination of the acute form in the transitional or sub-acute form here indicated, which has induced me to distinguish this as a distinct variety. It scarcely deserves this distinction, but it serves to impress the fact that cases of the acute form may subside into a condition which, at first sight, would be considered

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evidence of permanent organic degeneration, in which such an unfavorable prognosis is not justified.

It is, of course, highly important to discriminate these cases, both for the welfare of the patient and the reputation of the physician. There are no pathognomonic signs which will distinguish them, but the inheritance of a decided neurotic tendency, a history of paternal intemperance with the frequent recurrence of relapses will render the transition into the chronic form more probable, while the occurrence of fixed delusions and the permanent character of the sensory and motor disturbances preclude a favorable prognosis. Mental enfeeblement alone, or accompanied more or less by changeable symptoms of sensory and motor disorder is usual in the subacute variety, but if the mental enfeeblement is persistent, with no occasional rifts in the clouds, and is accompanied by equally persistent sensory and motor symptoms, the chronic form is to be feared.

The first outline of chronic alcoholism, as a distinct morbid entity, was given us by Dr. Magnus Huss, a Scandinavian, in 1852. Von der Kolk in Holland, Magnan in France, and Carpenter and others in England, have added definiteness to his description and given the disorder the prominent position which its destructive influence on the human race demands. Dr. Bevan Lewis, in his recent work on mental diseases, with his characteristic accuracy and thoroughness, has contributed valuable information in his researches into its pathology.

While alcohol has a deleterious influence on almost every tissue of the body, it has a particular affinity for nervous tissue and, as demonstrated by Dr. Carpenter, is found in proportionally largest quantity in the brain.

When the functional disturbance, described as existing in acute alcoholism, becomes mingled with the evidences of gross organic changes in the cerebral cortex, chronic alcoholism begins. From this it can be readily seen that there is no high dividing wall that separates this form from those which precede it. The transition is always more or less

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gradual, and it is almost impossible to tell when the point is reached at which gross organic lesions may first be found. There is usually a diminution in the intensity of the symptoms of functional disorder, but they become morefixed and permanent. As in the other varieties, they embrace disorder of the purely psychical areas, as well as of the sensory and motor fields. Delusions become more permanent, there is not so evident a causal relation between these and the disorder of the sensory areas, while the hallucinations and illusions occupy a more subordinate position in the symptomatology. A graphic picture might be drawn of the moral deterioration, the mental disorder, and the sensory and motor perversions, but time will not permit, and it will suffice to call attention to the fact that these four elements are combined in a manner highly characteristic of this disease, distinguishing it from all others and pointing to a pathological anatomy equally as distinct and peculiar. The grosser character of the pathological changes are also seen in the gradually increasing depth to which the reduction reaches as the denudation proceeds. There is the same instability and impulsive tendency which was noted in the previous forms, modified more frequently, however, by the gradually increasing mental enfeeblement.

The three elements of amnesia, delusional perversion, and dementia combine to give rise to a great variety of cases, according to the predominance of either element. The amnesic variety is that which lies on the "border land between disordered function and real structural change." The delusional form is much more frequent and is a most interesting variety, in which the destructive invasion of the sensory and motor areas is clearly seen. All cases of chronic alcoholism are not chronic alcoholic insanity, for disturbance of the sensory area, with absence of disordered psychical phenomena, sometimes occurs, and the point at which this merges into the mental disease is an interesting question, not always easily determined in a study of the patient's responsibility. The characteristic feature is the tendency of

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the disturbance in the psychical and sensory fields to invade the motor area, causing what has been aptly described by Bevan Lewis as a "disorder of the motor realms of the mind."

Before passing to a description of the pathological changes, let me call attention again to the fact that the symptomatology of all the varieties mentioned shows a similarity which is strikingly significant, and, though gross lesions are found only in the chronic form and occasionally in cases of the acute variety, points to a similar pathology in all. That there are not gross lesions found in the more recent stages simply shows that the point of functional disturbance is reached before the structural changes become so extreme that the microscope can detect them. The symptoms point to a disease of the same tissues, and demonstrate its existence as certainly in the light of the changes found in the chronic form as if the molecular changes were manifest to the microscope.

This paper is already too long, and in my description of the pathological changes I will be compelled to limit my remarks to the changes noted in the cellular elements of the cortex and the blood-vessels. Interesting and characteristic changes are also noted in the blood and in all the other portions of the nervous system, but they must be omitted. It must also be assumed that the later indications of physiological research pointing to special motor cellular elements and their particular localization are understood and accepted, a strongly corroborating evidence of which is found in the pathology of this disease, as well as in that of general paralysis of the insane.

It is probable that the pathological changes are to be detected first in the blood-vessels. The vessels of the pia, the short vessels extending from it into the epicerebral space and into the outer layer of cells, the long straight vessels dipping down through the intervening layers to reach the ganlionic and spindle cells of the fifth and deeper layers, as well as the vessels of the white substance reaching upwards

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from below, all show great structural change and evidences of degeneration. They are enlarged, more tortuous, irregularly dilated and sacculated, their walls are thickened and give evidences of atheromatous and fatty degeneration, the perivascular sheath is distended by lymphoid elements and the nuclei of the sheath have undergone fatty degeneration, often remaining only as a series of oil globules. The vessels are enormously and unequally distended, showing aneurismal dilatations, fusiform in shape, and their walls show great proliferation of nuclei. These changes are particularly noticeable in the long straight vessels of the pia where they dip down into the lower layers. Along the course of the vessels spider or "scavenger" cells, as they are so aptly named by Bevan Lewis, are accumulated, forming a perfect network of fine fibrillary prolongations about the vessels and in the outer portion of the most superficial layer of cells, immediately beneath the pia.

The nerve cells particularly affected are those of the first and fifth layers of the cortex, and especially the latter, which are often found degenerated when even the cells of the first layer show no signs of disease. The cells of the second and third layers usually escape almost entirely, or show but little indication of the degenerative process. There is usually some implication of the fourth layer, but nothing characteristic. In the fifth layer are found the large ganglionic cells, which are grouped so characteristically and abound so extensively in the motor area of the cortex that they may be reasonably held to be motor in function. In the motor areas particularly, but not exclusively, for the indications are found generally throughout the cortex, these ganglionic cells are found undergoing granular and fatty degeneration. Their prolongations have been rounded off or have entirely disappeared. This is especially true of the apical process, which connects these cells with those of the first layer. This has very generally disappeared entirely and may be much swollen and distended for a short distance from the cell, then suddenly diminishing in size and soon disappearing from view entirely. Scavenger cells abound particularly in prox-

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imity to the blood-vessels, and are found in all stages of development, from the young cell to those filled with granular and fat globules and to others which have begun to liquefy and disappear. These evidently prey upon the normal tissues of the cortex, and are the vehicles through which the products of the degeneration are removed, they themselves then undergoing liquefaction and removal, leaving the brain in the sclerosed condition which results from the preponderance of the connective tissue elements. The lower process of the ganglionic cells, which becomes the axis cylinder of an efferent nerve, is quite persistent, as axis cylinders usually are wherever found, though they are considerably changed in character. As they enter the white substance they are seen to be without their medullary sheath, are irregularly swollen and show numerous fusiform enlargements. The spindle cells of the lower layers also show considerable granular and fatty degeneration.

These degenerative changes in these particular localities is a most interesting pathological fact, and, taken in connection with the evidence of motor disorder which characterize the disease, are most instructive.

Briefly summarized, then, the pathology of this disease may be stated as follows: a neurotic tendency, either inherited or developed, predisposes the vascular system of the brain to the degenerating influence of alcohol, determining the affection of the vessels in this locality in greater degree than in the other organs of the body.* The circulation of the alcohol in the nutrient fluid of the brain cells modifies the processes of waste and repair in them and disturbs their molecular arrangement. The directly irritant effect of the alcohol on the internal coats of the vessels produces a condition of inflammation and subsequent degeneration. These changes extend slowly to the external coats and the perivascular sheath, and finally, both directly and indirectly, cause the degenerative changes in the cells themselves. These

* This neurotic tendency does not, we may reasonably infer, depend upon any structural peculiarity of the vessels themselves, but upon molecular peculiarities of the cellular elements, which these vessels supply with nourishment.

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destructive changes approach the cortex from both the exterior, leading to the degeneration of the outer layer of cells, and from the interior, affecting the two or three deeper layers. The anatomical and physiological connection between the cells of the fifth and first layers, if accepted, would be an additional explanation of their frequent association in disease, noted not only in this disorder, but also in general paralysis, and gives us a plausible theory by which to account for the striking combination of symptoms which characterize the two diseases and the many points of similarity in their manifestations. Assuming further that the apical processes of these motor cells are their sensory connections, may we not liken the irregular, unstable, and impulsive character of the motor symptoms to the increased myotatic irritability of the motor cells of the spinal cord when separated from the controlling influence of the higher centres? It cannot be mere chance which shows, as demonstrated by competent pathologists, the destructive changes described, in these particular localities, in two diseases with such characteristic symptoms as are seen in chronic alcoholism and general paralysis of the insane. Is it possible to infer that irritation of the sensory and ideational areas is connected with irritative processes in the more superficial layers of brain cells in those regions, while the symptoms of motor irritation are due to similar changes in the ganglionic and spindle-shaped cells of the deeper layers? As the process of destruction proceeds, the symptoms of deterioration predominate. Dementia, diminished sensibilities, and paresis take the place of the symptoms of irritation, and the autopsy reveals the gross destructive lesions of these respective areas. The prominent element distinguishing the pathological changes of the two diseases mentioned is that of time. The changes in general paralysis are much more rapid. The inflammatory process in the blood-vessels affects especially the outer layers and the perivascular sheath, and is rapidly communicated to the cell, while in chronic alcoholism it is confined longer to the internal coat, and the nutrition of the cells continues longer unimpaired to the degree which causes destructive change.

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THE USE OF ALCOHOL IN PULMONARY AFFECTIONS.*

By Andrew H. Smith, M.D.,

Professor of Clinical Medicine and Therapeutics in New York, Past Graduate School, Physician to Presbyterian Hospital, etc., etc.

Alcohol as a therapeutic agent acts in three ways which are distinct from each other. These are: first, as a food, second, as a stimulant, and third, as a vasomotor depressor.

As a food alcohol has the very important property of being easily digested and absorbed, and of being readily eliminated from the system in case an excess should be taken. As food, however, it must be employed within the limits of the quantity which can be assimilated and converted into tissue. This quantity varies with each individual, and in the same person at different times. Within this limit the alcohol, as such, will not circulate in the blood, but will be broken up into its ultimate elements, and be taken into the structure of the body as oxygen, hydrogen, and carbon. It is only when taken in excess of this quantity that it exhibits its deleterious qualities. The excess then circulates in the blood in its original form, and, as alcohol, exerts its poisonous influence.

Now it is obvious that the amount of alcohol which can be broken up and appropriated by the tissues will vary with the needs of the system at the particular moment. For example, when the blood is already surcharged with alimentary principles, it is able to supply to the tissues all the elements of nutrition required by them more readily than by decomposing into its ultimate constituents any alcohol which might be present in the circulation. On the other hand, when the blood is poor in nutritive material, the tissues lay hold upon

*Read at the New York meeting of the American Association for the Study and Cure of Inebriety, Feb. 18, 1889.

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the alcohol, so to speak, decompose it, and appropriate its elements to their own use. Accordingly, we find that when the tissues are being rapidly exhausted, as, for instance, in fever, the quantity of alcohol which can be borne without producing cerebral excitement is often very great; indeed, far exceeding what in health would produce profound intoxication. It is noticeable, too, under these conditions, the odor of alcohol is not perceived in the breath, as would be the case in health, thus showing that it has been decomposed, and has lost its identity as alcohol.

Within these limits, then, I believe that alcohol may properly be considered as a food, and one that is especially adapted to the wants of the system.

Alcohol is also a stimulant, even when it acts as a food. Its first effect, before it has had time to be broken up into its elements, is to quicken the circulation, and to impart a temporary increase of energy to the nervous and muscular systems. When given slightly in excess of what the tissues can utilize as food it continues to produce this stimulating effect. This property makes it extremely valuable when the forces of the system are flagging, and especially when the heart-muscle is in danger of becoming exhausted.

It is well known that alcohol acts to retard tissue change, and thus diminishes the body waste, while at the same time it lessens the amount of carbon dioxide to be eliminated by the lungs.

Lastly, alcohol belongs to the class of therapeutic agents which relax arterial tension. Under its influence the pulse becomes relatively large and soft, and acquires the quality distinguished as the "brandy pulse." This implies a greater capacity of the arteries to contain blood, and, therefore, a diminished fullness of the veins in all parts of the body.

With these facts before us let us consider what are the indications for the use of alcohol in acute affections of the lungs. In all severe cases of this class the question of alimentation assumes extreme importance. The pulmonary circulation being embarrassed, there is of necessity more or less venous congestion present everywhere in the system,

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and especially in the digestive organs, where it results in imperfect digestion, with all the consecutive embarrassments which this condition implies. Furthermore, when digestion and absorption have been accomplished, there remains a difficulty of assimilation, for the conversion of the products of digestion into living active blood after they have been taken up into the vessels, depends largely upon the action of the oxygen supply in the lungs. But in these cases the respiration is crippled, and therefore the oxidation of the peptones and other digestion products is liable to be imperfect. The result of this suboxidation is that these substances remain in the blood in the condition of foreign bodies, and as such have to be expelled from the system. Hence, it is not uncommon that in pneumonia, acute bronchitis, etc., we find egg-albumen, peptones, and other albuminoides in the urine.

It is, therefore, of the highest importance in these cases that we should have a food that will oxidize readily, and which will be easily eliminated if taken in excess. Both these conditions are fulfilled in alcohol, and for this reason I regard it as especially indicated as a food in all cases in which the pulmonary circulation is obstructed.

In acute pulmonary affections, especially when accompanied by high temperature, there is generally a rapid exhaustion of the vital forces. Hence, stimulation early becomes necessary, and its employment may be required for a considerable period. For this purpose nothing which has yet been suggested will supply the place of alcohol. Other stimulants may act more quickly, and in cases of extreme urgency may for the moment be more efficient, but their action is not sufficiently sustained, and universal experience goes to show that their true function is to supplement alcohol, not to supersede it. Indeed, all the changes and vicissitudes which medicine has been subjected to, there has never been any serious dissent from the general conviction that alcohol in some of its forms is indispensable when the powers of life are to be sustained against the ravages of exhausting disease.

If, in lung affections, there is added the condition of im-

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perfect carbonic acid elimination, it becomes all the more necessary to employ a stimulant which at the same time will retard the metamorphosis of tissue, and thus lessen the amount of carbon dioxide to be thrown off by the lungs. This indication is fulfilled by alcohol more completely than by any other agent of this class.

In all diseases involving a considerable degree of obstruction of the pulmonary circulation, there arises an especial danger, that of failure of the right heart. This organ being required to force the blood through the lungs against an abnormal resistance, is liable to become exhausted in the effort, and from the moment it begins to flag the resistance in the lungs which it has to overcome increases by reason of that very flagging. The task of the right heart thus becomes greater in proportion as its strength becomes less. Herein lies, in my judgment, the chief difficulty we have to deal with in the treatment of pneumonia, capillary bronchitis, etc. The obstruction to the blood current in the lungs leads to overdistension of the venous system, and the pressure of the blood from behind into the right chambers of the heart, while at the same time its exit from these chambers is impeded, brings a strain upon the muscular structure which tends more and more to paralyze it. This peril can be averted only by lessening in some way the venous tension. This can be done by the use of the lancet, and the popularity of venesection in former times had, no doubt, considerable justification. But it was because it relieved the right heart of some of the pressure upon it, not because it "subdued the inflammation."

But, better than the lancet is an agent which will equalize in a measure the distribution of the blood between the venous and the arterial circulation, without removing any of it from the system. There are a variety of such medicines, and prominent among them is alcohol. As already mentioned, it relaxes the muscular coat of the arteries, which otherwise by its tension would tend to empty these vessels into the veins. It is estimated that the capacity of the arteries when fully contracted, compared to their capacity when completely relaxed, is as one to two. A small fraction

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of this difference, however, would be sufficient to bring about an immense relief to the distended veins. That this is one of the ways in which alcohol is beneficial in pulmonary obstruction, I fully believe.

Thus we have in this one agent a remedy which fulfills three leading indications in the treatment of acute pulmonary affections involving embarrassment of the pulmonary circulation. I will not say that we could not do without it, but I do say without hesitation, that its value under these conditions is almost inestimable.

But, as if to emphasize its usefulness as a medicine, stands out in strong relief the fact which no one will question, that the habitual use of alcohol as a beverage, even to a so-called moderate extent, puts a person in a position in which the peril from an attack of pneumonia, or other acute affections of the lungs, is immensely increased. Nothing is more discouraging to the physician than to come to the bedside of a patient in whom he recognizes a case of this kind, and to find that he has to deal with a system whose vital resistance has been broken down by the poisonous influence of alcohol. Such a case is doomed, as a rule, almost from the first. Measures that usually give relief fail utterly in the presence of this condition, and even under the most skillful treatment the percentage of recoveries is small indeed. In fact, we may consider it a maxim, that in proportion as alcohol is used in health it becomes useless in disease, and not only so, but it impairs the usefulness of other remedies.

Thus, while I hold that alcohol, like morphine, has its place in disease, I contend that, like morphine, it has absolutely no place in health. Every drop of alcohol, as every particle of morphine, that a well man takes, makes him less a well man.

I believe that clinical facts, accurately observed and correctly interpreted, will bear out this statement in every case. Those who use alcohol and still remain in good health, are enabled to do so by a reserve of vital power which they expend in this way, and which would otherwise be available in another direction.

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CAUSATIONS OF ALCOHOLIC INEBRIETY.*

By Albert Day, M.D., Boston, Mass.

Superintendent Washingtonian Home.

On assuming the chair this evening, I propose to read a short paper, the result of my own experience, in which I shall but briefly refer to some of the many causations of alcoholic inebriety.

Undoubtedly, if the question, What are the causations of alcoholic inebriety? were asked of the general public, ninety-nine out of every hundred would answer, and correctly, too, Alcoholic intoxicants. But this answer would be unsatisfactory to the members of this society, and others who attend these meetings, and who gather here for scientific research and investigation, and a more thorough study of the subject. And in order to arrive at a correct solution of the problem we must discard much of the surface matter that is apparent to every one, and go back to first principles,— must penetrate deeper,— to primary causes, which have long existed, and as long been known to careful observers, though not generally admitted, before approaching the more direct causations.

It has passed into proverb that "No man becomes suddenly wicked." No man becomes an inebriate, a gambler or defaulter or a debauchee in a day. To find the cause of anything, we have to look far back of it.

Astronomers learn the specific gravity of the moon, not by contemplating that luminary, but by minutely watching the oscillations of the tides In like manner we are to learn the seats and causes of disease less by direct than by comparative study of them. We must investigate minutely the early habits of the patient, the influences under which he has been reared, and the constitutional or acquired predisposition to the development of disease.

* Read before the American Association for the Study and Cure of Inebriety, at New York city, March 11, 1891.

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With these preliminary remarks I will proceed to the consideration of the subject.

Men become educated into habits of inebriety, just as they are trained to become lawyers, physicians, ministers, merchants, farmers, or mechanics. There is a vast scheme of preparation, a thorough system of schooling, to which every one is subjected, perhaps in many cases unknowingly, before he can become a moderate drinker, a hard drinker, or a drunkard, and one of the primary schools of intemperance is the moderate-drinking family. The winning smiles by which men are led forward from one degree to another, are not to be found in the low grog-shops, nor among scenes of coarse and vulgar revelry. They are first encountered amid the enchantments of luxury, ease, and elegance. In the bosom of moderate-drinking, intelligent, amiable, and often highly-educated families, where so many moralities are practiced, so many sympathies cherished, and so many charities dispensed, there, and not in the bar-room and the groggery, with its miserable horde of vagabond customers, are the primary assemblies from whence many of the drunkards in embryo are sent abroad. In these respectable families, and in those larger circles where they meet socially, temptations in a thousand covert and alluring forms is every day presented, and under innumerable plausible pretences, usages are maintained that tend to create the appetite, confirm the habit, and to carry the victim through all the downward stages of humiliation and corruption, by which one generation after another are gradually transformed into confirmed inebriates.

Let the responsibility of making drunkards be placed where it belongs Rumsellers do not keep the elementary schools of drunkenness. They serve rather as frightful examples, to make people loathe and abhor the business. The most degraded sot that hangs around the rumseller's door, detests his traffic, even while begging for more of his drink. It is the men and women of high position, who sip their ale or sparkling wine, and long for the advancement of Christian principles at the very moment they are staying their progress

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— these are the persons who set examples, and make respectable the pernicious habit of any indulgence, which, but for the protection of their high character, would wither and perish before the light of advancing truth.

It is my firm belief that no family accustomed to the daily use of wine or ardent spirits ever fails to plant the seeds of inebriety, which sooner or later produces a harvest of sorrow and grief.

It is here that the tender digestive organs of children are perverted, and predisposed to habits of intemperance. From long observation, I am convinced that one or more members of every wine-drinking family sooner or later become inebriates. We must remember that in every instance, drunkenness is the simple failure to drink moderately.

Other primary schools of inebriety may be found in billiard rooms and ten-pin alleys, and other resorts of amusements, where the means and temptations to drink are ostentatiously multiplied and displayed, and which may be regarded as "graded schools," which injure and degrade all who habitually spend their evenings at such resorts. These garnished and glittering establishments, with their bewitching attractions, become in process of time to many young men chandeliered and crimsoned hells,— the very maelstroms of moral shipwreck.

For fifty years I have maintained that inebriety is a disease. This is now very generally admitted, but it has taken a long time, and the efforts of many able and eminent men to establish this fact, and the causations are too numerous to mention in the brief time to which I am reasonably limited.

The disease is engendered by countless causes. In many cases it is undoubtedly inherited through taint of blood and mind, as insanity. The theory that the sons of drunkards are apt to be sober men holds good only in the abstract. But, even if it were practically true, the taint, or predisposition, may be traced to the grandparents, or even to more remote progenitors. The craving for stimulation and excitement may be inherited from an ancestor just as neurotic or ner-

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vous diseases. The law which visits "the sins of the fathers upon the children, even to the third and fourth generation," still holds good, and many have descended to drunkards' graves in consequence of the grandsires' excesses. Proofs of this pathological fact are numerous, as all who have studied the matter can testify. But there are other and easier discovered causes that produce the same result. The foolish customs of society, speedy gains, disastrous losses, mirth, despair, the want of employment, the press of business, passion, ill-health, crime, unrequitted love, family difficulties, overtasking the mind or body, and scores of impelling motives, some of which I shall soon mention, induce men to swallow the intoxicating draught, vainly hoping either to drown their sorrows or increase their joys. We see it at every turn, and many of us know of it in our professional career: for there are comparatively few homes wholly free from the effect of this monstrous evil.

Another cause of inebriety arises from the erroneous impressions that prevail concerning the strengthening and peculiar invigorating properties of alcohol. This popular delusion has been countenanced and fostered by the fictitious names, subtle and delusive in character, which have been appended in a thousand ways to alcoholic preparations. In many cases habits of inebriety have been formed in infancy by the administration of quieting compounds. Hardly any mother will be without paregoric, essence of peppermint or ginger, which is given to infants on the least sign of uneasiness. In fact, habits of intemperance, which in some cases are pronounced hereditary, can be traced back to drunken nurses.

In relation to what are the inherent causes of inebriety, I note among others, a predisposition transmitted. Peculiarities of form and features are known to be transmitted, and why not as well moral qualities?

The history of alcoholic abuse would be the history of society from the most remote period until the present time, and it forms a dark background to the broad picture of

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healthful human progress. Some of the influences which predispose to inebriety arise from unfavorable moral, social, and personal conditions. Among the unfavorable moral conditions may be mentioned a want of wholesome public sentiment on the subject in communities. This arises, too often, but by no means exclusively, from poverty and its attendant evils, ignorance and vice. Rum is at once the refuge and the snare of want, destitution, and sorrow. To the vacant and untrained mind it brings a boon not otherwise to be had — excitement and oblivion. That both are brief and bought at a ruinous cost exerts little restraining influence. Of equal, if not greater, importance are the influences that spring from ill-regulated and demoralizing domestic relations, and the absence of motive, and the contentment which properly belong to the family organization.

In the individual, in addition to hereditary propensities, the evil results of a lax, over-indulgent, or vicious early training, as shown in a want of power of application, or moral rectitude, in self-indulgence, craving for excitement, and a weak will, powerfully predispose to the temptations of alcoholic excess.

The administration of alcohol during convalescence from attacks of illness is not unattended by the danger of subsequent abuse. It seems to me a physician ought to inform himself of the hereditary tendencies and previous habits of the patient before assuming the responsibility of administering alcohol in any form, even in the acute stage of disease. I shall not attempt to discuss the medical use of alcohol. I only suggest the greatest care in its use, if its administration is ever necessary in disease.

Irregularities of the sexual functions in both sexes, and especially sexually excesses, strongly predispose to alcoholism. Depressing mental influence of all kinds tend strongly to drinking habits. This is true of persons in all classes of society. Bodily weakness and inability to cope with the daily tasks imposed by necessity, impel numbers of persons of feeble constitution, especially among the laboring classes,

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to the abuse of alcohol. Injuries to the head in childhood are apt, in adult life, to develop acute alcoholism.

There are many conditions of chronic disease attended by suffering which are susceptible of great temporary relief by the taking of alcohol. Indeed, in my experience I find a vast number of inebriates who are such by sequence, and not from antecedent causes.

This, gentlemen, is but a brief mention of causations of alcoholic inebriety, but to enter into further details would be but to rob some one else of time that at most is limited. With these remarks, I leave the almost endless subject for your consideration.

HABITUAL drinkers of ardent spirits are always making vain efforts to obtain more oxygen for their lungs. They frequently take deep inspirations, in the form of sighing; are apt to throw windows open on the coldest days, and sleep with the chest thinly covered, and with their hands clasped above their heads, in order to give more play for the lungs. The reason of this lies in the fact that the constant presence of more or less alcohol in the system delays the conversion of venous into arterial blood, by interfering with its power of absorbing oxygen. Thus tissue degenerations are invited, as there is insufficient oxygen to dissolve out the insoluble substances, and their accumulation causes mischief. In such persons, the superficial veins are swollen and distended, and of a deep purple tint, especially noticed on the backs of the hands, through the presence of excessive carbon; and the skin all over has a soft, characteristic feel, resembling velvet. — *Dr. Lewis in "Medical World."*

PERFORATING ulcer of the foot is occasionally seen in inebriates, and is due directly to the excessive use of alcohol. It is also closely allied to general paralysis, and when it appears is a suspicious symptom of profound degeneration, that should receive careful attention.

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THE PHILOSOPHY OF THE ETIOLOGY OF INEBRIETY.*

By J. T. Searcy, M.D., Tuscaloosa, Ala.

Men in the world can be very readily graded, as they ascend from the lowest to the highest types, by two very essential qualifications — the one, their degree of *intellectual sense;* the other, their degree of *moral sense.*

By the lowest type of men we mean one both ignorant and immoral; by the highest type, we mean one both intelligent and moral. These two qualifications can, to a considerable extent, be separated: we often speak of the *mental* and *moral* qualities as distinct; and we recognize the fact that in the same individual, frequently, the levels of these two qualities do not correspond. For instance, we can have one person, who will grade *higher* in his morality than in his intelligence, and another, *lower* in his morality than his intelligence. The rule, however, is, — the ability to think is accompanied by an equal ethical ability.

In the gradual advance of a race from savagery to civilization, their progress is occasioned by and marked by gradual improvement in both these particulars.

In any man, his intelligence and his ethical ability are raised to a level corresponding with his previous practice in performing these kinds of action. The savage, compared with the more advanced man, is inherently less *able* to perform these kinds of thought, and as he progresses upwards towards civilization, through generations, there is a gradual improvement in his *ability,* until as a most advanced man he finally has most *capacity* to *think* and to *do right.*

The first essential in an advancing man, or advancing race, is *activity.* An indolent, idle man or race never

* Read at the meeting of Association for Study and Cure of Inebriety, Feb. 18, 1891.

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advances. It is the activity or exercise of the brain that increases its ability. Accomplishments and excellences are acquired only by practice and exercise.

The rapid competitions of active society, therefore, necessitate *activity* on the part of the individual to avoid suppression and elimination. Hence, improvement of individuals is most rapid in active society. The continuous brain-work, which under such circumstances becomes a necessity, improves the thinking ability of the rising man.

In the rising man, because it is a necessity, his intellectual (competitive) ability antedates to some extent his ethical sense. In a society which is advancing from a savage to a civilized grade, competitive ability is acquired *before* general communal interests require the harmonizing of the competitions. The safety and the welfare of society soon demand that the competitions of its membership shall be harmonized. This gives rise gradually to the evolution of higher and higher rules of conduct. Public opinion and moral sense, with laws and government to enforce them, thus become of a higher and higher grade, until the highest type is reached.

In this gradual improvement of society, the advancing man is more and more practiced in ethical observances, until, as an accompaniment to his improving ability to compete, there also grows in him a better ethical sense of the rights of others. A high ethical sense may well be called the *capstone* of human improvement.

In the best communities to-day we find some individuals — in most communities they are few, in no community do they reach a majority — who have a *high* order of ethical sense *inherent* in them. These persons are always inherently intelligent, for it takes the highest order of intelligence to so understand the complexities of civilized competitions as to be able to formulate and maintain high rules of conduct to suit them. Such a high order of man — highly intelligent and highly ethical — is only the result of a long line of generations of this kind of practice.

We speak of civilized countries, and of civilized societies

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as though their membership were uniform. This is not so. Every community, even that graded highest, will furnish examples ranging all the way down from the highest type, just described, to the lowest. In any community, in a so-called civilized country, we can find persons who inherently grade very low in thinking ability and in ethical sense. They are at the savage level. A great many have the savage level of moral sense, while they hold a higher level in intellectual sense. This, in my opinion, is particularly the case with deteriorating or degenerating individuals they have lost their ethical sense in advance of their intellectual, — the latest evolved and most delicate goes off first.

We have not yet invented a cerebral *dynamometer*, by which we can test and record a man's intellectual capacity or his moral strength, but in our associations with others we instinctively recognize such information to be very valuable. It is interesting to note how much we are engaged in this very kind of work. We are continually making estimates of this character, and it is astonishing, in a crude way, how expert we become at it.

In making our estimates in society, the position a person holds is one to which he has *arisen* from a *lower* level or one to which he has lapsed from a higher one. Human brain ability is not by any means a constant quality — there is no standstill level. The index rises and falls in the course of the life of the person, and also it varies in the course of the line of descent. In so-called civilized society the *lapses* probably constitute the large majority of the incompetent.

Ability, at whatever height it occurs in an advancing man, is raised to that level solely by previous brain practice. The practice is either personal or ancestral. The person receives his ability at a certain level from his ancestry and raises it or lowers it by his habits of thought. By far the best and most stable ability is that which is the result of practice reaching through a long ancestral line.

While it is true there is only *one* way of improving brain ability, namely, by activity, there are *several* ways of lower-

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ing it. There are several ways in which the *lapsed* members of society have reached their levels.

Brain inactivity, I have already stated, is the *physiological* method of lapsing. There are a number of *pathological* methods.

Our pathology is always injured or impaired physiology, so I have dwelt this long upon the physiology of cerebration, in order more properly to approach its pathology.

Whatever injures the structure of the brain impairs its functional action. This impairment is exhibited in altered conduct, in a loss of ability, both intellectual and ethical.

We can go through the wards of our insane asylums and find numbers of men, who once ranked high in intelligence and in morals, now lowered in both. Defect, injury, or disease now renders the brain of each of them *less able* to perform at as high a level as it formerly did.

Insanity, indeed, is only a name we give to a certain degree of brain incapacity. As generally defined, it simply means there is such a degree of incapacity as renders the person an *unfit* member of society. For this reason, for his own or his neighbor's safety, he has to be placed under forcible restraint; his brain is so lowered in intellectual ability that he is unable to compete for his living, so a support has to be given him; and it is so lowered in ethical ability that he is a nuisance or a danger to others, so he has to be restrained.

In society, short of the degree called insane, we have innumerable varieties and kinds of disability, exhibited by the peculiar, the cranky, and the delirious.

Besides the long list of diseases, traumatisms, and defects of the brain, which impair its functional capacity, we also have a long list of drugs, which, taken into the circulation, bring down the brain's capacity to a lower level.

I need not go over the long list, nor point out the peculiarities of their actions, but at once mention *alcohol* as one of them. This agent, from its so general use, probably next to idleness, brings down brain capacity in the world — and it certainly does a great deal to produce the *lapsed members* of civilized society.

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If it were not for the fact that alcohol has in the system a special effect upon nerve centers, particularly high-brain structure, men would never have used it as a beverage. In seeking and taking it the alcohol drinker is after its *brain* effect. If its effects in the system rose no higher than his collar, he would never drink it.

The brain is the organ of thought and all conscious action. The partially hardened condition of its delicate structure, that alcohol produces, renders it less capable of cellular motion or action Its conscious sensitiveness is lessened thereby. It is less able to feel. The alcoholized man therefore says he "feels better" or "feels good," and acknowledges that this kind of lowered sensitiveness is what he likes. He "feels better" if his brain feels less any discomfort or pain he may have. Even in health, if he have no special discomfort, the benumbed condition is a more comfortable one. The well man therefore says he "feels good." The *luxury* of alcohol drinking consists in this condition of the brain.

I wish to draw attention to the fact, that in order to obtain the pleasant comfortable condition of lowered sensitiveness, the alcohol drinker does not avoid or fail to have the other alcohol effects on his brain — there is a general lowering of function. When the brain's ability to feel is lowered, its ability to think and to adjust conduct ethically are also lowered. The keenness of a high ethical sense is probably the *first* thing blunted.

The disability of the alcohol drinker will vary according to the *amount taken;* according to the *inherent strength* of brain structure; and according to the *length of time* the brain-abuse is continued.

For instance, first, according to the *amount taken,* conscious sensitiveness lets down from a slightly benumbed, comfortable condition, to that of complete anæsthesia; intellectual ability varies from being "a little off" to the condition of a temporary dement; the ethical sense varies from slight indecorum to full viciousness or madness. Secondly,

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the degree of brain disability under alcohol will vary according to the *inherent brain strength* of the drinker. Weak brains will be lowered in ability more than strong ones, and low grade savage brains, or defective ones, will exhibit their incapacities in the lines of their deficiencies. Thirdly, the disability will also vary in proportion to the *length of time* the brain-drug abuse is continued. A single debauch can be fully recovered from, but long-continued use produces such an injury the full function is never restored.

Sometimes, all three of these conditions obtain in the same person; when this is the case, the degeneracy of brain function is extreme. The *inebriates* constitutes this extreme class, always degenerated to a very low level in intellectual sense and ethical sense. Of course there is a *tendency* to return to previous capacity when the brain-drug abuse is left off; but I question whether an inebriate's brain is ever fully restored to its previous capacity, or ever reaches the level it would have occupied without the injury.

As society advances from a savage to a civilized level success depends more and more on brain strength. The most advanced society pays the highest premium for brain ability. In active civilized society, the safety and success of the individual depend almost altogether upon this qualification. In savage society, the muscle strength suppresses the weak, in advanced society it is the brain strength of the more competent that suppresses the incompetent.

The drinking man lets down in business and loses his money because his thinking capacity is lowered by his habit —his ability is weakened. The drinking man also lets down in morals, *falls* into vicious habits, because his ethical sense is weakened.

In modern society, brain idleness probably puts most men into the *eliminating* level; next to idleness comes alcohol. These two agencies rapidly rid crowded society of their unfit membership. Nothing is so rapid an *eliminator* as alcohol. The least fit, both in the idle wealthy ranks, and in the idle poor ranks, are most given to its use. Under the

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light of advancing science, the use of alcohol is becoming more and more confined to the class of the weak-brained and the vicious. The intelligent, for the sake of maintaining this intelligence and superior fitness, are learning to leave it off.

Society is much interested in the intellectual level of its members, but it is most interested in their *ethical* level. The safety and survival of the individual are most dependent upon his intellectual ability; society, though, is principally interested in his ethical ability. The safety and welfare of society depend upon the moral status of its people. The good of society demands this.

Communities, races, and nations, like individuals, are engaged in competitive life. The most successful is the one which has the high intellectual, progressive capacities of its people welded into a harmonious, united whole by a high ethical sense.

There is a very satisfactory scientific explanation, therefore to the fact, that the most altruistic persons, those most interested in public good, have always been opposed to alcohol drinking. They recognized the fact that it lowered the intellectual and moral abilities of the people and tended to weaken and disintegrate society. Probably one reason they have never succeeded better in enforcing their opinions upon the attention of the alcohol users, is because they have not had the advantage of recent scientific knowledge to back their instructions — the brain has been left out of their philosophy altogether.

I have often been made impatient in listening to the lecturer presenting the "scientific aspects of the alcohol question" to an audience, to see him illustrate extensively with charts and spend hours to show the effects of alcohol upon the coats of the stomach, and upon the structure of the liver, the lungs, and the kidneys, and never allude once to *the brain*, when the fact is, alcohol's principal effect is upon this organ; and the functions of this organ so far transcend the functions of all the others, that, I might say, there is no comparison.

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When the individual in society is taught the fact, which he seldom knows, that alcohol incapacitates this very organ upon which his safety and success, in the competitive world, depend, he will be very much less inclined to use it. And when society recognizes that with alcohol a low-grade vicious man can be made chemically out its most excellent man, and that this process is continually going on among all its ranks, it will be more alive to spread scientific instruction upon the subject.

MEDICAL MORPHINOMANIACS. — Dr. Rochard, who contributes to the *Temps* a letter on the need of institutions for the treatment of morphinomania in France, asserts that medical men and their auxiliaries, the chemists, constitute a good half of the total number of morphinomaniacs, though they naturally take every possible care to conceal the fact. He attributes the prevalence of this depraved habit among members of the profession and pharmacists, to the facility with which they can procure the drug, and urges that, since this is the case, restraint offers the one possible means of effecting a cure. He points out that in Germany and America special institutions have been devoted to the treatment of this spreading tendency, and he might have added that in England these cases are admitted to dipsomaniac asylums. In France no facilities of the kind are available, and victims to the habit are allowed to go on to the bitter end in their own homes. Suicide is a common termination, and appears to have become more frequent since the cocaine habit has been associated with the other. It was hoped at one time the introduction of the cocaine habit would prove an antidote for the morphine habit, but the reverse has proved to be the case. The effects of the two drugs are in reality superimposed, and the result is a peculiar form of mental alienation manifesting itself by the mania of persecution and its usual concomitant, a tendency to suicide. — *Medical Press.*

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INEBRIETY MEDICALLY.

By J. E. Blaine, M.D., of Chicago, Ill.

The study of inebriety, scientifically, is yet in its infancy, and beyond the fact that it is a disease, a vast unoccupied field exists, ready for research and therapy. From the advances already made sufficient hope is given that practical care and *cure* of this disease is one of present possibility and future certainty.

It is properly within the domain of medicine, especially in the department of diseases of the mind and nervous system, and to the alienist we look for the rescuing of the victim and the bringing about of a change of the opinion, that has been entertained by the public since the days of demonism and witchcraft, when the insane-hysterical, cataleptic, and epileptic were supposed to be possessed of devils and the feeble-minded old women were witches.

We are all familiar with the results of treatment of the inebriate by non-professionals, expecting a cure by pledge-signing, temperance societies, various forms of punishment, religious enthusiasm, etc. Nor has there been any better success achieved by thrusting them into jails, work-houses, or inebriate homes for a few weeks or months, and then sending them out to encounter the temptations produced by their disease, *without special treatment* to neutralize or obliterate the effects of past habits. No poison, except syphilis, plays so extensive a role in the morbid affections and degeneration of the tissues, nervous or non-nervous, as does alcohol. The problem we have to deal with is that here we have a man, normal in all respects, except that he has no absolute, permanent control over the desire for alcohol. In the periodical drinker weeks and months may pass without an outbreak of the disease, when suddenly, either by disturbance of his men-

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tal equilibrium, the accumulated force of heredity, or a nervous, explosive, indefinable something, like an epileptic explosion, an outbreak occurs and our man goes on a debauch.

In the habitual drinker the conditions are somewhat different; on his part there is not that striving to avoid liquor, no self-acknowledgment of his inability to stop, no realization of harm being done by it; the continuous presence of alcohol in the system seems necessary to his physical comfort and the effects of the alcohol on him is a reflex one on the nervous system. Alcohol has the distinct property of coagulating living animal protoplasm; applied to a raw surface produces pain and rapidly coagulates the albuminous fluids covering the part; injected in a sufficiently concentrated state into a vein it coagulates the blood; taken into the stomach undiluted or nearly so produces inflammation; in large, concentrated quantities is an irritant poison, producing deleriant, anæsthetic, and asphyxic effects.

Absolute alcohol is dangerous in almost any dose, by reason of its powerful affinity for water, which it abstracts at once from the tissues to their detriment and destruction. In small quantities, largely diluted, it produces only an agreeable sensation of warmth, and stimulates the secretion of digestive fluids. It is absorbed with great rapidity by the veins of the stomach and intestines, enters the blood *unchanged*, and soon reaches every nerve, muscle, and gland. After its entrance into the blood, a certain amount is oxidized; the amount must be large, for, while it is a fact that alcohol can be recovered from the various emunctories of any animal to which it has been administered, yet no one has been able to account for anything like the amount given. Having the alcohol *unchanged* in the blood, it exercises the same effect on the tissues inside as it does outside the body; the tissues with which it is first brought in contact exist in the walls of the blood vessels themselves, and in them the direct irritating effect of the alcohol is first seen, consequently the most notable effects are found in the smallest arteries and capillaries. Mingling in the current of the blood, it comes

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in contact with the vascular muscles, first contracting the muscular coats, diminishing the diameter of the vessels, accelerating the heart's action, raising the arterial pressure, paralyzing and anæsthetizing the minute sensory nerves, fibers, cells, and molecules, coagulating the albumen and albuminous fluids, presenting increased heat and functional activity with vascular pressure in the brain, and by saturating the blood corpuscles and liquor sanguinis, the alcohol directly impedes the blood changes by which oxygen quickens nutrition, thereby preventing their oxygenation or taking up the oxygen received in the lungs, diminishing the exhalation of carbonic acid by the lungs, as well as the excretion of urea and the fixed salts through the urine. Now, alcohol being composed mostly of carbon and hydrogen, is, in moderate quantities, compatible with the elements of living protoplasm, but taken in *excess* of what the tissues can assimilate and preserve their normal equilibrium, this *excess* mechanically obstructs the *access* of oxygen to the living protoplasm and may arrest the vital processes entirely. Further, this *excess* of alcohol tends to accumulate in the nervous tissues through the peculiar selective capacity of the nerve centers for this poison, it thereupon expands its primary and most potent influence. Three times as much alcohol has been obtained from the nervous tissue of drunkards as from the blood. The brain being so exceedingly vascular and so richly endowed with cellular elements which are penetrated by every *excess* of alcohol, it becomes appreciably filled with it. The pathological changes, as seen in the examinations at the West Riding Asylum in the alcoholic insane, are but the termination of the changes begun at the first ingestion of alcohol in excess. A few of these changes, as noted by Lewis, 1890, are first in the vessel walls which lead to extensive atheromatous and fatty degeneration of the tunica intima, associated with which is found parallel changes undergone by the adventitial sheath in the increase and fatty degeneration of its elements. Fat emboli are frequently established in the smaller cortical vessels during the progress of these changes, and the exten-

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sive dilatation and aneurismal states are probably direct results of the diminished resistance of the vessel and paralysis of its muscular coat.

An extensive *endarteritis* affects the ultimate radicals of the cortex, and with the pre-existing change in the composition of the blood leads to the devitalization of the nerve tissues. The subsequent change in the interstitial tissue around, and the nerve elements themselves apparently, depends much upon the subject's predisposition, which seems to be the chief determining factor in engendering the fatty or sclerotic change which characterizes the two classes of alcoholic subjects. However, in all we find a like tendency to a degredation of tissue in the replacement of the normal elements by new connective growth; in some is found a special tendency to extensive fatty change in the nervous tissues, so that the parallel degeneration seen elsewhere, as in the fatty or sclerosed liver, seems to be reproduced here. It is probable that the fatty change is altogether a *more* acute process, and the sclerosis the result of a *much slower* and more *gradual poisoning* of the tissues.

The fatty change is more liable to be induced in senile alcoholics. These changes are undoubtedly indicative of a *very chronic inflammatory action* proceeding in the vessels of the membranes and slowly involving the upper cortical strata. Coincident with this a similar change is found throughout the nutrient supply of the medullated substance of the convolution, which leads to important changes in the lowermost series of nerve cells — the spindle layer and medullated nerve fibers themselves at this site. In the outermost cortical layer is seen the apical distribution of the large, deep-seated cells which it is supposed possesses motor endowments; their poles are in an early stage affected by the sclerotic changes proceeding in outer layer of the cortex; these cells are affected by the degenerative change ere the morbid process extends deeply. Simultaneously with this, an invasion of the cortical elements takes place from the medulla of the gyri; this morbid process extending upward involves both spindle and

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motor elements. The deepest cortical layers are more especially affected — cases being met with where the uppermost layers show no morbid indications. The vascular, nervous, and connective elements all participate in the change, tunics crowded with nuclear proliferation. The nervous and connective elements at the site of the large, so-called *motor* cells, constituting the clustered groups of the central gyri show a notable degeneration. The great nerve elements are swollen and rounded, and in place of their usual delicate protoplasm, present a rough granular aspect. Down in the lowest layers, the spindle cell formation, is found a large development of scavenger cells scattered profusely upon the blood vessels. The *spindle cells themselves are covered by heaps of nuclear proliferations*, and the appearance presented is that they are undergoing rapid degeneration, and removed by the scavenger corpuscles, which act as phagocytes and devour nerve elements. When the ingestion of alcohol has been stopped and the quantities taken have not been large or long continued, the system can in many cases eliminate all that is in the body, and through the regular reconstructive agencies of the system, the brain and nervous system can regain their normal state.

But in the vast majority of cases the brain cells, fatigued by their own excessive action, invariably out of all proportion to the strength of the body, excite an intense craving for restorative agents; recuperation through rest and food is a slow process and too irksome to the individual with nerves all unstrung and who has neglected, wholly or in part, nourishing food and rest. He finds in the repetition of alcohol something which has a special affinity for these tired nerve cells, it producing a rapid and pleasurable relief, enabling him to continue his bodily activity without the rest and food really required. Accompanying the above is the well-known anæsthetic property of alcohol, benumbing the moral and intellectual faculties; with weakened will and low resisting power the disease becomes chronic. Now a permanent dilatation of the vessels takes place; cells, molecules, capillaries,

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lymphatics and all nervous tissue becomes indurated and changed, thus changing molecular combinations in the higher nerve centers where the character of brain action is determined, the same field where pathological action takes place in the vast majority of nervous diseases that affect the character and mental status of the man. Alcohol is so distinctly poisoning to the nerve centers and cells that once its peculiar influence — like opium and other narcotics — is made on these structures, the desires and cravings for it become permanent, overruling all other considerations.

Desires for alcohol, like other normal desires, primarily are but the indication of the needs of the system. In a healthy man all his desires and cravings can, as a rule, be gratified in some proper way at some proper time, so as to promote the good of the body and mind, none requiring absolute prohibition. The proper way and time to gratify them is determined by the controlling influence of reason, experience, and law. A craving which leads to harm is a *diseased craving*. The strongest and most subtle desires of man arise in the highest centers of the cerebral cortex, *i. e.*, the emotional centers, and are not necessarily connected with any functional activity of the lower nervous centers, as the sympathetic or visceral ganglia. The impulses which guide and regulate these desires must also proceed from the highest cerebral regions. They are not purely of a spiritual nature, but are associated directly with the physical changes in the brain tissue. For the manifestation of hurtful desires there must be present a diseased craving and also a paralysis of control. The peculiar work that a nerve cell must do, requires that it should not be sluggish or stable, but sensitive and unstable. In certain individuals this sensitiveness and instability are carried to excess and the cell acts in an explosive manner. In a motor cell this abnormal condition gives rise to convulsions and exaggerated reflexes; in an emotional cell it causes explosions of passion and diseased cravings. A tendency to this emotional condition is obtained by heredity from ancestors whose brains have been

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subjected to undue excitement or have been poisoned by alcohol, opium, or syphilis.

Control over the emotions and over the conduct is the highest function of the human brain. The power to do right and refrain from wrong is earliest seen in good stock, but is slow of development or may never become strong in the children of habitual criminals, drunkards, or insane. The power of inhibition or control is, even in the best stock, destroyed by alcoholic poisoning, and diseased cravings with paralyzed control occur together, the one involving the other. Again, every-day experience shows that personal predisposition plays an important part in the *genesis* of central nervous diseases — it is not actual disease but a liability to disease — a lack of resisting power, in consequence of which certain influences, unable in a normal individual to produce any abiding disease, are capable of setting up disorders of function and often alterations of structure. This predisposition is of special importance in connection with inebriety, which not infrequently results from involuntary causes — such as can truly be called an inebriate diathesis. Under these conditions he is not a voluntary sufferer. Volition is excluded and his inebriety is but the active manifestation of a certain diseased condition which lies at the root of, and *is* the cause of, his inebriety.

In regard now to the specific action of alcohol,— it exists in the blood in an unchanged state ; a certain amount serves as nutrition to the vessels taking it up. The remainder or excess serves only to retard the various vital forces which, in proportion to the quantity taken, actually produces paralysis of sensation and motion. In their normal condition the vital phenomena of living protoplasm are dependent upon the permanence of a certain equilibrium in which all its constituent molecules take part. Disturbance of this equilibrium produces a lower degree of complexity in the movements of the molecular combinations, thus producing a lower grade of vital manifestations. This equilibrium may be disturbed by the introduction of matters within or without the body, and every such introduction means a readjustment of this

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equilibrium if their living identity is to be maintained. The disturbance produced by the introduction of alcohol into the circulation involves the functions of sensation, reflex action, voluntary motion, respiration, circulation, and distribution of heat. These disturbances are due to the paralyzing energy of alcohol in contact with living protoplasms.

The action is peculiar and characteristic. First, the impressions of sense are disturbed, the intelligent connection between the different cerebral centers is divorced, so that the intimate connection between the will and brain action so changed that a point is arrived at where the will can no longer control the material forces of the brain, in that all power of directing the functions of the brain and body through the medium of the brain is arrested. The individual feels as though he were of a dual nature, one part quiet, dignified, of lofty aims and ideas, apologizing for the acts of the other part, seemingly thus to vindicate the high character of his inner consciousness in contrast to the wild, boisterous and uncontrollable conduct of the other part that is giving way to desires and passions. Physiologically, this is due to the inharmonious and disproportionate activity in different portions of the brain. Psychogically, it is the result of a change of the relation between the material substance of the brain and that immaterial personality which constitutes the conscious, intelligent individual. Therefore, in *consonance* with these anatomical changes and phenomena of alcohol, we have produced the inebriate, no longer a free agent, his moral, religious, business, in fact all perceptions, aims, ambitions, and pleasures lowered and degraded.

My investigation and experience lead to the recommendation of sufficient control to insure regularity and continuity of treatment, in which the eliminatives, alteratives, and reconstructive nerve agents hold out the promise of cure of this almost universal disease.

DISCUSSION.

DR. CHURCH. Mr. President: I will just say a few words. I do not desire to take the extreme ground of the

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gentleman who has opened the discussion, nor of the essayist. It is well sometimes to take a middle ground. A great deal of difficulty in the discussion of this subject arises from the plurality of names appended to the condition which throws a haze over the situation. We have heard something of inebriety ; formerly we heard something of drunkenness ; we hear of alcoholism, and there is delirium tremens and *mania a potu* and alcoholic insanity, and dipsomania, and methomania. Now for each of these several conditions the various reporters will give a more or less indefinite description, and there is a great deal of overlapping, so that it is very difficult to get a clear idea of the specific significance to be attached to the various terms ; I do not know exactly what the doctor would imply by the term inebriety, after hearing his paper. I must insist, however, that the continued use of alcohol in large quantities will produce physical disorder, will produce anatomical disorder in the nervous system ; and where there is disorder in the nervous system it is natural to find disorder in the functions of that system —any disorder from the merest tremor to the wildest delirium or deep coma. On the other hand there are individuals who take large quantities of liquor and never present any symptoms. Some of our octogenarians have drank liquor freely for 60 or 70 years, and claim that it does them good. The ability to withstand poisons, is something that depends upon the personal equation.

In regard to heredity, we must remember that it is necessary when we find a man who is an inebriate to examine his father ; we must know something of his grandparents and great grandparents, and we must remember the tendency to skip a generation ; we must remember that some may not be brought up in a way that gives them a physical tendency to alcohol through deprivations, exposure, or concomitant illness, and which a succeeding generation may have to undergo. I like Dr. Earle's treatment, however ; when he shuts a man up for a year he places him in rather good circumstances, as far as the treatment of alcoholism is concerned. It is not

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medical treatment exactly, but very much better. It deprives him of his poison, which is the use of the most potent remedy, and at the same time impresses upon the individual a certain amount of self-reliance, and shows him that it is intended he shall exercise that reliance. I am of the opinion that, in a very small percentage of cases, certain drugs are of value; I also believe the surroundings should be of a desirable sort, and that the moral and religious influences, and anything which will give the man self-control, is of value. Each case is to be considered by itself and sweeping generalities avoided.

DR. BROWN. Mr. President: In my opinion the tendency to drunkenness is often hereditary. Fondness for the bodily and mental excitement of intoxication, natural sociability, and complacence, a tendency to neurasthenia, which is relieved by stimulants and finally deficient inhibitory power in general are all important elements in the formation of the habit of drunkenness, and one or more of them will be found to exist more or less prominently in many cases.

It will be generally conceded that these characteristics are frequently hereditary, and it is only in this sense that heredity can properly be applied to the condition.

Dr. MOYER. Mr. President: In my judgment, alcoholism simply marks a degeneration in the nervous structure and functions of the individual affected with it, and in that sense it is a disease, the same as criminality evidences a defect in nervous structure, which I firmly believe brings it within the category of the degenerations. I believe that the criminal and the inebriate mark but teratological defects, and belong to the same degenerative type as paranoia and idiocy.

These degenerate beings react upon the social order and the environment reacts upon them; when the aberration reaches a certain degree they are no longer fit to be at large.

All this simply means, that in the upbuilding of the society there has come an evolution in the structure and functions of the nervous sytem — indeed, the former is but

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the expression of the latter. It is apparent that occasionally individuals will present themselves who have not reached the average plane; for a time they may sustain themselves, but ever on the "ragged edge." They eventually slip into the abyss of crime, vice, pauperism, or lunacy. The last two of these society considers a misfortune, while in reality they are quite as often expressions of crime and vice as alcoholism or thieving.

Regarding the question of heredity, I wish to say that no diseased condition is directly hereditary. One does not inherit consumption, epilepsy, or alcoholism, but the structural defects that favors the development of these conditions. So in those unfortunates who inherit primary nervous defects, it is often accident or social surroundings that determine the direction of its expression. The defect in a person of high social position that produces an inebriate, may, in a lower social order, produce a criminal.

Regarding the treatment of these conditions, I think Dr. Earle's position is unassailable. It really makes little difference whether we put these unfortunates away in sorrow or in anger — whether we say to them, "You are a diseased person and must go to an asylum for treatment," or, "You are wicked and must go to a jail." In either event the chief curative indication — that is, detention — is met. Eventually, a philosophical jurisprudence will deal with criminals in this way, place them in detention until they recover moral health — if chronic and incurable, keep them until they die.

Dr. J. E. Blaine, in closing the discussion, said: Mr. President: I have little to say; of course my views were brought out in the paper. I believe, so far as heredity is concerned, that, as I stated, it is not a hereditary liking for alcohol, but there is that in the nervous organization of the persons and their ancestors, who have been addicted to alcohol, or morphine, etc., which will impress itself upon the nervous system and render their children more liable after indulgence in and of the narcotics, to development of the

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desire until it becomes a disease. If alcohol is innocent, as Dr. Earle would have us believe, my paper is wrong, but if excess of alcohol in the system produces that change in the system which the best pathologists and microscopists allege it does, then it is only reasonable to look for a permanent effect, or at least a change in those tissues on which the poison acts more particularly.

I knew this paper had to combat with views that have been held for many years — that the alcoholic is a distinctly responsible individual, even after he has been drinking for twenty years. I do not see how he can be made any more responsible, how the holding out of a future punishment will have any influence upon the nervous system that is impressed with alcohol. It is the fact, after knowing so many cases in which treatment by moral suasion and forced abstinence had been tried, and where the failures have outnumbered the successes two to one, and observing that medicinal treatment *cured* a vast majority, led me to know that the medicinal treatment tending to eliminate the alcohol and rejuvenate those damaged structures did bring about a greater success than any other treatment.

INFLUENCE OF OPIUM, MORPHIA, AND CORDEIA UPON THE STOMACH.— Abutkoff sums up the results of his experiment on six healthy men as follows: These drugs visibly diminish stomach digestion; they positively diminish hydrochloric acid secretion; they weaken the general acid condition of the gastric juice; they diminish its digestive power, but do not influence lactic acid fermentation; they do not influence the absorbing property of the stomach; opium has the most, codeia the least effect. Hence, in persons with weak digestion, opiates should not be administered until two or three hours after meals, while they may be used with impunity in cases of hyperacidity.—*Deutche Med. Zeitung.*

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INEBRIETY NOTES, No. II.

By S. V. Clevenger, M.D., Chicago.

I was much impressed with the value of Dr. Clouston's suggestion that cravings were often misinterpreted, and while alcohol may seem to have been what was needed, some physiological want really existed which might have been satisfied by some other means than drinking. I know a patient in point, who often hurries to the nearest restaurant and eats heartily of *anything* to appease an appetite that all too often he had ministered to with alcoholics, and he usually finds this expedient successful, but the food repletion makes him uncomfortable and somewhat melancholy.

The relations of alcoholics and foods in general are worth deep consideration, and such a study would well repay the physiological chemist who would not only experiment, but read up what little literature exists on the subject and then *think* over the entire matter. As far as I have been enabled and had time to investigate, I am convinced that just as no two persons are affected exactly alike by the same kind of potations, so we will have to group susceptibilities into less general classes, sub-classes, and varieties, and that the matter of food substitution for drinking will have to be *individualized* very largely.

The spread of a bar-room free lunch has its significance. Concentrated nitrogenous food, such as cheese and roast meats prevail, apparently to supply elements complementary to the hydrocarbon liquids, and we find inebriates who live mainly upon cheese and meats while drinking, with an aversion for vegetables and fruits, especially apples. One dipsomaniac I recall knows that he is recovering when he begins to dislike cheese and takes meats sparingly and grows fonder of vegetables, especially peas. Liebig, many years ago, claimed

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that the proper diet for a drunkard during abstinence should be leguminous, as this met to some extent the desire for hydrocarbonaceous diet that had previously been taken in the more concentrated form.

In "Physiological Memoirs," by Wm. A. Hammond, 1863, a chapter records the results of experiments with alcohol and tobacco upon the human system; and, however much the doctor's conclusions may agree or disagree with those of earlier or later investigators, they are well worth citing as being the result of painstaking and conscientious inquiry. He claimed that "alcohol increases the weight of the body by retarding the metamorphosis of the old tissues, promoting the formation of new, and limiting the consumption of the fat." "The use of alcohol," he therefore states, "even in moderation, cannot be either exclusively approved or condemned. The laboring man who can hardly procure bread and meat enough to preserve the balance between the formation and decay of his tissues, finds here an agent which, within the limits of health, enables him to dispense with a certain quantity of food, and yet keeps up the strength and weight of his body. On the other hand, he who uses alcohol when his food is more than sufficient to supply the waste of tissues, and at the same time does not increase the amount of his physical exercise, or drink an additional quantity of water, by which the decay of tissue would be accelerated, retards the metamorphosis while an increased amount of nutriment is being assimilated, and thus adds to the plethoric condition of the system which excessive food so generally induces."

No cast-iron rule, therefore, can be applied alike to the "wealthy inebriate" and the "drunken laborer" for their reformation, than would be applicable to the treatment of surfeit and starvation. Furthermore, the matter is one that does not concern alcohol ingestion alone, but there must be considered a multitude of toxic ingredients in most drinks, such as logwood, anilines, salicylic acid, sulphate of copper, fusil oil, tannic acid, ethers, and essential oils of many kinds.

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In fact, average intoxication has ceased to be a simple matter, for there is no guessing what chemical combinations the indiscriminating tippler may have experimented with.

From mistaken motives of expediency, the enemies of alcoholic debauchery have persistently refused to admit that there was any good in alcohol at all, forgetting, ignoring, or ignorant of the fact that there can be no greater harm done to a good cause than through adopting immoral means to foster it. Alcohol has its uses in the world, though its abuses may outnumber them. It may be a "medicine in sickness and a poison in health," its usefulness in debilitated conditions arising from age or illnesses, and its marked sustaining powers must not be ignored if we are to arrive at a true understanding of what it does in the economy, why it does it, and above all *why there is such universal addiction.*

From the evolutionary standpoint the intestinal tract and associated organs have been built up by degrees from the simple gastrulated pouch-like condition to be found in many low invertebrates, and in every animal hydrocarbonaceous substances are more or less perfectly converted into asssimilable food for the general tissues. The colonies of cells comprising the organism are adjusted to definite repetitions of feedings; the enteric cells taking some sustenance from the crude materials, the lacteals, hepatic, cerebral, renal colonies, in their turn, feasting upon the peculiar pabulum passed on to them, according to their positions in the economy, their chemical affinities and structures, and their opportunities for supply.

The highly elaborated alimentary apparatus of mammalia has, doubtless, through millions of years of inherited structure adaptations, finally become adjusted to food containing more or less *debris* or innutritious materials, from which it is the united function of the various organs to separate that which nourishes the organism. In other words, the stomach, intestines, liver, blood vessels, etc., have to *work*, to labor, to pick over, treasure up this, and cast out that; and the entire individual is built up to this necessity, and effete matter has

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become just as much of a necessity mixed with food proper as is gravel in the digestive apparatus of the chicken. Concentrated "rich" diet, of any kind whatsoever, may at times fulfill a useful purpose, when the general strength is at fault and there is need for instant repair; but when this is long-continued the system revolts and announces that nourishment too easily obtained, and by throwing certain organs out of employment, must be paid for in some other way.

Alcohol is not only a food, but a highly concentrated food, and therein lies the explanation of universal addiction and its danger. Could the cells of the organism speak, we might hear a hurrah from the stomach and small intestines in which the adjacent blood vessels would join over the alcoholic feast which has not been earned by work. The nervous system, with its special affinity for this food, joins in the excitement of having thrust upon it what before it obtained with more difficulty, but calmly and regularly. Part of nature is on a holiday, but structures less favorably situated with regard to the orgie are sullen and finally clamorous; the liver and kidneys and excretory organs generally are off duty, or through many repetitions of the riot conclude to work as little as possible. The surfeited colonies begin to suffer from repletion. Hyperplasiæ, congestions, crazy physiological processes, blocked avenues, some parts engorged and others starved follow, and things in general try to adjust to the revolutionized condition, the liver and kidneys shut up shop, and the brain takes a vacation. Were it possible to easily adapt the animal parts to concentrated chemical food, nothing of this would occur, but that nature does make a sincere attempt to habituate the *race* to a less harmful assimilation of alcohol, I think there is reason to believe.

A few centuries ago, there was most universal drunkenness, pervading all ranks, castes, and degrees. That public opinion has suppressed much of a continuance of this there can be no doubt, but *something* of the lessened exhibition of alcoholism is doubtless due to transmitted adaptation. Savages are readily upset by small quantities of liquor, and prac-

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tice enables many individuals to increase the quantity taken before the same effect is produced. So, just as races may be immune from certain epidemics, the descendants of drinkers may not only indulge more freely than their ancestors, but indulgence may become a necessity to the proper working of their (individual) physiological make up. We are familiar with the common theory that drunkards may beget degenerate offspring, but it is not recorded that a physical degeneracy thus entailed may be compensated for by liquor ingestion. Here is a case in point: A talented young fellow was harassed by anæmia, hepatic and intestinal difficulties, insomnia, and the knowledge that the origin of all his ailments was in his father's excesses. He dreaded alcoholics and for long years determinedly abstained, for which he deserved all the more credit as he knew that drink was what he needed. He finally yielded in despair, concluding that it made little difference whether he died from drinking or the want of it, and, presto, away went all his ailments. He is now 30 years old, does not get drunk, but takes whisky in a fixed quantity as a food. The future will determine the issue, but I believe that he may live to old age and preserve the equilibrium he has thus established, particularly as good heredity antedates his paternity, and by "reversion" his offspring may be free from such trouble. The temperance ranter would never admit the possibility of this; but if we are to get at the truth of any complicated question there must be no skulking from facts, and, so far from there being danger in admitting the possibility of such an instance, we may be throwing light on the study, obtainable in no other way. A useful analogy may be cited to explain some psychical features of alcoholic degradation, and analogies have a far deeper significance than is generally supposed; for, as Herbert Spencer points out, many natural laws that apply to nations are directly derivable from those that govern the individual components, and, I still further hold, that the man is what is constituted by his component cells, no better nor worse, and identically, in the aggregate, as they are.

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Just as the Chinese suppose that the mind resides in the abdomen, so average mankind thinks that congresses, parliaments, presidents, kings, are the brains of nations. For present purposes we may draw comparisons between parts of the individual and corporate organisms, as follows; nor does it matter that we mix up mechanism and men, the organic and inorganic, for the skeleton is as useful as more highly organized parts:

Merchants, bankers, etc., are the nation's intestinal organ cells, and that they don't eat up everything that passes into their custody is solely due to their not being able to do so.

Common carriers are the blood vessels.

Telegraphs, and other such means of communication, constitute the nervous system.

Laborers, soldiers, are the muscle cells.

So-called rulers and law-makers (whether in republic or monarchy), merely obtain their power from the general units, and serve to correlate the intestinal and vascular operations, as the sympathetic system does.

The professors, authors, and real thinkers generally are the unrecognized brains of communities, however starved and neglected, and, as individuals are usually guided emotionally and think afterward, so the real brains of a community are disregarded in the main. I can hear the usual comment upon this indirect method of approaching a subject, What relevancy has this?

Well, it has every relevancy, identity of import, in fact, but Spencer is the best exponent of this, and has sufficiently defended this method of reasoning. Pathological conditions infest communities as well as individuals, from want of harmonious working of parts. When the elaborating, transferring apparatus of a person or nation, as the intestines and blood vessels, or merchants and railways, either separately or together, become too hoggish, and want to absorb everything, it is an easy matter to induce the intestinal ganglia legislature to adjust means for so doing; but, as this means death to the organism in general, a feverish condition may follow

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that threatens the national life until an equilibrium is restored. The intestines are often traitors to the commonwealth, but so may be other associated parts.

Merchants, the marine and railways, discover a short cut to fortune and forsake established methods. "Confound the brain!" says the duodenum. "Blast the bloody liver!" says the stomach, it will have to take what I see fit to let it have—my wants are first." Debility, if not worse, follows, as a matter of course, in which the greedy enteron shares, and the "bloated bond-holder" realizes that he is merely a constipated colon, and prays for a diarrhœa to put him in healthy relationship with his neighbors.

Without carrying analogies too far, I meant to illustrate, in a homely way, why there should be such a psychic and physical revolution wrought in the alcoholic, and in few words the matter can be summed up thus: Millions of years have been occupied in building up the brain and body to its present fairly harmonious working together, and much, if not most, of this is an adjustment to the necessity of *work* on the part of such organs as we possess; and when one part by isolation seeks to take all in its way, we have cancers, tumors, inflammation, etc., with not only danger to remote parts, but threatened destruction of the too selfish tissue itself. Gastritis, gastro-enteritis would be fortunate warnings to the alcoholist, just as were the effects of some rabid tariff increase to fall first upon the instigators; but, unfortunately, the brain may be degraded before the stomach feels the effects so much.

It is precisely because this wonted, inherited, built-up harmony between the organs is destroyed by potations, *by the too dangerous food*, by the too ready and rapid assimilability of alcohol, that the tissues turn traitor to one another. Accompanying other physiological processes, those of the mind are gradually erected, and the latest acquired are the first to decay, from any cause, such as senility, etc.

The short cut afforded to nutrition by alcohol, shuts off further attainment intellectually (I speak of extreme cases);

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the natural affections are perverted, the higher sensibilities are blunted, heartlessness, savagery, viciousness, lowered will power and sentiments, follow, as matters of course.

Men and nations must remember that "eternal vigilance is the price of liberty," and that knowledge increase and dissemination are the greatest foes to vice and disease, which are often, if not always, one and the same thing, whether afflicting the person or the people.

RETURNS OF PERSONS "DRUNK" IN LIVERPOOL. — The annual report of the head constable gives very elaborate tables concerning one of the great questions of the day, viz., the drink question. As a rule persons who are merely drunk, but capable of going home, are not interfered with, probably because the Bridewells would scarcely hold them. Consequently persons are "booked" as "drunk and disorderly"; these amounted to a total during the year of 9,251. Those found "drunk and incapable" were 3,515; those who, in addition to being drunk, were also guilty of assaults upon the police, numbered 850. "Drunk and other assaults," and "drunk and other offenses" numbered 1,438, and completed the total of 15,054. Another table gives an even more elaborate return of the days of the week, and of the three hourly periods of the apprehensions for drunkenness. From this it appears that the largest number were apprehended on Saturdays, the next largest on Mondays; while the three-hourly periods which comprised the largest number of apprehensions was from 6 P. M. to 9 P. M. — *Lancet.*

A BILL to prohibit physicians and drug clerks from practicing, who are addicted to the use of whisky or opium, has been introduced in the legislature of Georgia. The first conviction is a fine of two hundred dollars, and the second, the license to practice is revoked.

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THE PSYCHOPATHIC SEQUENCES OF HEREDITARY ALCOHOLIC ENTAILMENT.*

By C. H. HUGHES, M.D., ST. LOUIS,

Professor of Psychiatry and Neurology, Marion Sims College of Medicine, late Superintendent of the Missouri State Lunatic Asylum No. 1, etc.

Nothing in neuropathology is now plainer than the retrograde heredity of chronic alcoholics. The alcoholic poison interferes with the highly-organized physiological movements of the psychical centers, arrests and perverts the complex activities of the cerebral cortex, and begins a decadent and perverted neural metamorphosis that goes on from one stage of instability to another, until the final ending of all neural instability is reached (unless fortuitously arrested) in dementia or imbecility and death, when even perverted neural force can no longer be evolved. The evolution of the cerebro-psychical centers, thus arrested or perverted, ends in final dissolution and extinction of type.

The neuropathic thrall of entailed alcoholism is no new theme to neurologists. It was familiar to Benjamin Rush, and the researches of Morel in the field of neuropathic degeneracy sequent to ancestral alcoholic excess have been so often affirmed and reaffirmed by credible medical testimony that no doubt now remains in the medical mind of the power of excessive ancestral alcoholic indulgence to pervert neuropsychic function in the descendants of victims of this vicious disease.

We need not dispute the point as to whether alcoholism is a vice or disease, for it is and it may be both or either, and whether it in the beginning be one or both, its ending is

* Read before the Mississippi Valley Medical Association, at Louisville, Ky., October 9, 1890.

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always in disease, which is either the beginning or continuance of a transmitted neuropathic or neuro-psychopathic heritage.

If the first generation, as Morel has observed, shows immorality, alcoholic excess, and brutal degradation, the second one will usually show, as he also observed, hereditary drunkenness, maniacal attacks, and general paralysis or some similar psychopathic affection. The third generation may show sobriety, but instead of the transmitted drunkenness, the hereditary neuropathic perversion will probably reveal itself as Morel saw it, in hypochondria, mania, lypemania, and tendency to homicide and suicide; and we shall see in the fourth and after-coming generations feeble intelligence, stupidity, early insanity, and the beginning of the end of the family in extinction.

All alienists have confirmed this observation of Morel, and the fatal heritage of chronic alcoholic toxhæmia is proven upon those living within the walls of asylums for the insane the world over; and in every walk of life without, and upon the cadavers of those who have died under the power of this neuro-toxic force. We no longer need the extensive clinical observations of Magnan nor the later pathological researches of Bevan Lewis for proof. The diseased arterioles, the granular degenerations of the nerve cells, pericellular and perivascular nuclei proliferation, aneurismal dilatations and exudative and indurative cerebral changes, are too familiar now to be longer doubted and witnesses too many to be here enumerated, embracing all who have clinically studied inebriety, attest the fact that the habitual long-continued use of alcohol as a beverage in excessive quantity in one generation makes an indelible impress upon the nerve stability of the generations that follow.

It has the undoubted power of engendering neuropathic and psychopathic conditions *directly* in the individual, besides a great number of extra-neural morbid conditions, as the oft-observed and no longer doubted delirium tremens,

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epilepsy, insanity, and imbecility, paralysis, and the neuritides of drunkards show, and the morbid entailments of alcoholic excess do not stop with the individual, as we have seen. They pass over in greater force to his descendants. This is the gospel of science. These morbid endowments of the drink habit are more apparent in the drunkard's progeny, for the reason that his children come into the world dowered with less power of neurotic resistance to the depressing and perverting assaults of alcohol and its compounds upon the integrity of the ganglion cells of the cerebrum and the nervous centers of the whole cerebro-spinal axis and sympathetic system.

By reason of a better organic heritage and the greater inherent power of vital resistance, the drinking person may show but little of the inroads his alcoholic excesses are making upon the physiological soundness of his cerebro-spinal and ganglionic centers. An occasional or single epileptic seizure during a debauch, or none at all, during a life given to drink, some perversions of disposition or mental depression, or a day or two of trance following a prolonged spree once or twice in a life-time, or none of these evidences of cerebro-psychical damage may so markedly appear. (The subject of alcoholic trance is too extensive to be treated here as its forensic merits require. We content ourself now with a simple note. *Vide finis.*)

None of these positive and more directly perceptible consequences of alcoholic damage may appear directly in the individual. He may go through life moderately full of alcohol, able to attend in a fairly good manner to the routine demands of his business, to be cut off prematurely under some slight extra organic strain (for one of his extraordinary hereditary endowment of nerve resistance), by an apoplexy — cerebral or pulmonary — which another less strongly endowed for resistance by nature would have withstood. His ganglionic centers fail him in some vital crisis, and the "silver cord is loosed" forever.

The nerve mechanism, which never escapes in the

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habitual or periodic excessive drinker, but more especially in the regular so-called moderate social drinker (who never sprees, though seldom refuses when asked to drink, who takes his regular evening night-cap and morning eye-opener and tri-daily appetizer) is the vasomotor system. This failure causes the pneumoniac to die from an attack of lung fever of no greater severity of causation than that of which his non-drinking fellow in the next bed promptly recovers. He may die prematurely of an over-worked kidney or an over-taxed liver, by reason of ganglionic paralysis (and I believe that over-distension of the renal circulation from the general vascular hyperæmia of over-brain-strain and alcoholic stimulation combined, are the remote causative factors of Bright's disease), and neither he nor his friends may think that alcohol has done him harm.

But look at the drinking man's children! He may have been himself a very proper and apparently healthy citizen, beginning in early life a regular business, and having acquired and filled a regular and honorable business place in the world, and never seriously sick till the last acute illness that suddenly carries him off before his physiologically appointed time.

Why is one child an idiot or imbecile, another erratic, moody, violent, visionary, melancholic, or insane, epileptic, choreic, or suddenly criminal, despite the best of training and environment, especially among his latest offspring, while only the children born of his loins earlier in life, when alcoholic excess had made no organic impress upon him, are ordinarily healthy in mind and body?

The habitual disturbances of organic function — morbid physiological exaltation and reactionary morbid depression, through increased vascular relaxation and consequent capillary congestion, may not materially affect the integrity of function in the matured cells of the psychical centers of the parent of sober lineage, so as to markedly modify their matured and long-established habit of acting, but in the drunkard's child, who starts unstably endowed by hereditary

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neuropathic entailment resulting from an ancestor's alcoholic excess, the resistance power of the parent or parents in early life is not in the child's organism.

He is a step lower than his father or mother, or both, if they were habitual drinkers, in the scale of organic degradation, and has in consequence feebler resistance to the assaults, not only of alcohol from within, but of adverse environments from without, and they reveal this hereditary organic degradation in erratic actions, morbid, insane, and criminal conduct — conduct which in them is always the offspring in whole or in part, of disease — disease within. Upon them, consequently, influences without their organisms, resisted by others, have an overpowering force. Their environment leads them irresistibly into crime, like the extraneous circumstances which cause in them disease their parents had not shown, and crime their parents would have resisted.

The drunkard's child's crime is not all his voluntary crime, nor his vice engendered disease all disease of his own making. His father or his father's father or mother may have deliberately chosen that which, with all its voluntary seeming in the boy, is become to him an inexorable morbid fate, appearing as immoral conduct. "The fathers have eaten sour grapes, and the children's teeth are set on edge."

With this too cursory preliminary review of what we know of the hereditary neurotic enthrallment of alcohol, we record an interesting hypothetical case, which we will suppose to cover the facts in an important medico-legal record of entailed alcoholic disease and crime perpetrated under its fatal sway.

HYPOTHETICAL CASE.

Suppose a young man approaching his majority, naturally kind of heart, not reared in crime nor in the slums of a city's poverty quarters, but in comfortable circumstances, and fairly educated among correct people, commits an unprovoked murder of one of the dearest and nearest of his

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friends. In his family the following abnormal traits appear: On the maternal side a grandfather is a man of excess in eating, drinking, etc.; inebriate and melancholy, and he dies of apoplexy. An only son survives him long enough to develop inebriety and die of drink in his youth. A brother is like himself, and dies a drunkard. Sisters and cousins in varying degrees, according to environment, exhibit the same failing. A grandmother at an early age drank liquor to excess, and died prematurely in consequence of excessive drink. All the sons of the grandmother's sisters died young in consequence of drink. Of the remaining ancestry of this alcohol-tainted organism, one uncle was, from early youth, addicted to alcoholic indulgence, his thirst for drink becoming finally insatiable, and he died of delirium tremens in early manhood, after previous attacks of acute alcoholic insanity. Another uncle was also addicted, from his early youth, to the use of alcohol to inebriety, and final melancholia and insanity with delusions of dread and suspicion. Several sisters of these two men were victims of the hereditary failing, among them the mother of the supposed young man we are considering. The boy's father, too, was in early life, before the boy's birth, an intemperate man, and the boy himself was from early puberty intemperate, unstable, and choreic, and had suffered in childhood from a physical shock to his nervous system, caused by a violent fall. This young man in question, when under the influence of liquor, was a markedly changed man, and when the time of one of his periodically recurring sprees would come around, he was likewise very different from his natural self, being moody, listless, drowsy, and melancholy; and after indulging in his inordinate craving and unnatural appetite, he would become exhilarated, reckless of danger, excessively cheerful at times, and extremely violent towards, and suspicious of his best friend, filled with morbid fears, and dreads, and suspicions. When sober he was nervous, restless, and unhappy, and whenever he got a taste of liquor, he would invariably drink to excess — drink-

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ing to exhaustion, prostration, and illness in consequence of his excesses. Suppose for five or ten years the life of such a person was almost one continual succession of sprees — suppose such a man after such a life, and at the close of a several weeks' prolonged spree, takes the life of his best friend by manual violence while struggling to get money from this friend who had refused it, and with the aid of an accomplice takes money, jewelry, and other valuables from his person, pawns some of the things for liquor, making no attempt to escape, and not appearing to remember or realize the enormity of the crime committed, remains in the neighborhood of the murder intoxicated until arrested, remembering the fact of the robbery, but not believing the party robbed and maltreated was dead or seriously injured.

This is a common kind of inebriate crime. This picture would answer for the ordinary portraiture of the average inebriate criminal arraigned in our courts of justice. It is of necessity so drawn as not to describe personal cases that have come under my professional care, but it is true to inebriate nature, as I have seen it all too pitiably and painfully portrayed, and will answer well for a composite picture of morbid, as contra-distinguished from purely immoral inebriety and crime. The picture is not overdrawn, but is faithfully true to nature.

I have purposely put in a criminal motive in the above hypothesis that the natural semblance to crime may appear just as it appears in many cases of insanity. The inebriate and the insane person act, unless totally demented, from motive more or less apparent, but the hidden springs of human conduct in both are different from those in the rational and healthy mind. A different combination of morbid influences, ancestral and immediate, in the nervous organism of the chronic inebriate or the periodic inebriate unites with his environment in the drink-enthralled man, from that which influences and determines ordinary human conduct in sane and temperate men.

1st. Assuming the above hypothetical case to be true,

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what would be your judgment as to the existence or non-existence of hereditary alcoholic degeneracy and impairment of the brain, and the existence or non-existence of dipsomania, or involuntary and resistless impulse to drink alcoholic liquors to excess, in the case of the supposed youth, and degree of irresponsibility from drink?

2d. What was the mental condition of the supposed person when he committed this unlawful deed?

3d. What is the effect on the mind and on the will of such an inherited taint, united with the state of chronic alcoholism, as in the case of such a supposed youth?

Such, with more or less completeness of specific detail, is the character of the hypothetical case and interrogatories, of late years propounded in our courts to the expert in psychiatry, for the neuropathic entailments of chronic ancestral alcoholism. Thanks to an enlightened judiciary in some of the American States, aided by the wise and judicious efforts of our medico-legal societies, inebriety has become a recognized extenuation and often complete and just excuse for crime perpetrated under its potent and often resistless morbid influence, and the following, or something like them, are still the customary interrogatories propounded, *pro forma*, by the counsel for the State.

1st. Is it your opinion that such a supposed person was unable to distinguish between right and wrong?

Or, perchance, the more enlightened and just interrogatory like the following is offered by the State, and "Will you say that a person so affected could not tell that an act which he committed was wrong, or if conscious that it was wrong — is it your opinion *that he was incapable of resisting the impulse to commit it*, by reason of disease hereditarily entailed or acquired?"

It were fortunate for the unfortunate victim of the faulty and imperiously unstable neuropathic heritage of long-continued or hereditarily transmitted alcoholic indulgence, if a wise, humane, and considerate counsel and court secure such just instructions in such clear conformity with the facts of

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clinical observation and experience as the last interrogatory would warrant; for inebriety, either in its periodic or continuous forms, is a disease, as much so as the recognized and acknowledged phases of insanity, epilepsy, idiocy, and imbecility it both directly and indirectly engenders, and while in considering it in its medico-legal relations, we have also to consider the accompanying factor of a once normal volition, we have in the inebriate a mind and will always more or less modified, perverted, deranged by disease. Alcohol being itself a directly toxic agent, in its influence on the brain and allied nervous system, as well as potently poisonous to the blood itself in any considerable quantity, and especially so, as all experience proves, when long continued, in excess, in either the individual or his ancestors.

It is, indeed, a strange phenomenon of the human mind in its forensic relations that an agent which the world recognizes and acknowledges as the parent of pauperism, insanity, and crime, and the chief direct or indirect populator of penal, eleemosynary, and correctional institutions, and the proven cause of so much disease, misery, and death, should be held responsible to the extent it is before our judicial tribunals, when the hapless and often hopeless and helpless victims of its vicious power are arraigned to answer for crime committed through its influence over their involuntarily enslaved organisms — organisms often prenatally predestined to pathological perversion (as most of the unfortunate inmates of asylums for the insane are organically predetermined to an aberrant course of life conduct), through the alcoholic excesses or other neuropathic disorders of ancestors, or through a precocious drink-craving, however engendered, whether ancestrally or self-acquired, and prematurely and excessively indulged, to the harm of the delicate machinery of the brain.

The force of physiological habit is recognized in all of our dealings with men. Why, then, should courts ignore the power of that neuropathic thralldom which alcohol undoubtedly engenders in certain individuals, to their harm

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and the harm of the world about them, enchaining, enslaving, and perverting conduct, until the unfortunate slave of its vicious sway is no more in harmony with his natural self, unperverted by this disease, than the lawfully and justly consigned inmate of a lunatic asylum is?

The dipsomaniac is as surely perverted and deranged in his brain and connected nervous system as any other lunatic, and the confirmed inebriate claims our sympathy and succor and the kindly consideration of the law, because he is the victim of disease. It is for humanity and law to decide in each individual instance, however, how far on the one hand inebriety should extenuate crime and to what extent on the other it should punish the volition that may have engendered the disease. It is a plain proposition, which admits of no doubtful interpretation, that acute alcoholism voluntarily and premeditatively induced, or even voluntarily yielded to, for the purpose of committing or shielding from crime, is as culpable as any other criminal intent, while, on the other hand, a diseased propensity to drink, indulged in obedience to the promptings of a resistless organic aptitude handed down from father to son, or transmitted through the womb of an alcoholized or otherwise neuropathic mother, should receive a different consideration, just as any other neuropathic heritage causing psychopathic perversion, extenuates even the most heinous of crimes in the eye of the law and in the judgment of courts.

Our ancestors in the medical profession rescued the lunatic from the neglect and violence of ignorance: let us protect and save the nerve-degenerate inebriate.

A correspondent of the *Courrier des Etats-Unis* sends from Paris, under date of September 20, 1890, the following mention of a recent trial for homicide, committed in that city under somewhat peculiar circumstances, and of the prompt acquittal of the accused on the ground of mental irresponsibility. We present to our readers a translation:

On April 20th last, at 11 o'clock A. M., a cry for help was suddenly heard to proceed from a house in Park Royal

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Street, an apartment of which was occupied by a widow, aged twenty-seven years, named Bohringer. The neighbors met a man on the threshold of her room, who remarked: "You can enter. It is all over with her. There she is,"— at the same time pointing to the young woman, who lay stretched on the floor in a pool of blood. The victim had been struck with a finely-sharpened cold-chisel. After being conveyed to the Hospital St. Louis, she was able to speak but a few intelligible words, and died after an agony of a few days.

The assassin, named Joseph Hahn, a widower, and the father of three children, had long paid assiduous court to the deceased, with the expectation of marriage. That he had premeditated the crime, was patent from the fact that he had hired a cutler to sharpen the chisel, the day before. It was satisfactorily shown before the court, that Hahn was a skillful workman, that his probity was incontestable, that he adored his children, but that, when drinking, he became violent and brutal, destroying or injuring whatever was within reach.

At first sight, the tranquil face of Hahn in no way betokens insanity; but his attitude before the court and the audience was so singular as properly to raise a doubt in this regard.

The following were his replies to questions by the court:

Court. The police report represents you to be an honest man.

Hahn. Yes, I have always been honest. I have never in my life intentionally done harm to any one. But sometimes I drink too much, and then it affects my head, so that I know no longer what I do.

C. Why do you drink?

H. Because I am obliged to associate with the public in order to procure work.

C. You met the Bohringer woman in a Roquette Street restaurant. Did you know that she had a lover?

H. No; I did not know it.

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C. Did you propose marriage to her?

H. No; it was she who proposed it to me. We were to be married at the end of her term of mourning. We had but two months more to wait.

C. Then why did you kill her?

To this question Hahn at first replied: "I do not know;" and then, gesticulating wildly, he said, amid loud sobs, "I loved that woman as I did my eyes. She deceived me. She had an accepted lover, and I did not know it. She gave me by mistake a handkerchief belonging to that lover. She had consumed my money."

Doctor Ball testified to the limited responsibility of the prisoner. "Hahn," he said, "occupies the very borderland of insanity; he is of so hysterical a temperament that he does not enjoy the full possession of his faculties."

The jury rendered a verdict of acquittal. On the reading of the verdict, Hahn appeared astounded and stupefied for several minutes.

THE House Committee on the District of Columbia yesterday reported favorably a bill, which passed the Senate in May last, to provide a hospital and home for inebriates and dipsomaniacs in the national capital, appropriating $200,000 therefor from the national treasury. Accompanying the report is a letter from General Wilcox, Governor of the Soldiers' Home, urging the passage of the bill in the interest of the veteran soldiers, many of whom are addicted to inebriety, and the easy prey of the liquor-sellers of the District. General Wilcox says: "We find that the laws of the District are totally inadequate to correct the evil, and our only remedy is to dismiss men from the home, many of whom have served their country faithfully for a great many years."

THE legislature of North Carolina has been petitioned to enlarge each of its State insane asylums, and to set apart wards for the treatment of inebriates.

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Abstracts and Reviews.

THE EARLY EYE-SYMPTOMS IN CHRONIC ALCOHOLISM; By CHARLES H. MAY, M.D., CHIEF OF CLINIC EYE DEPARTMENT, VANDERBILT CLINIC, INSTRUCTOR IN OPHTHALMOLOGY, COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.

As is well known, the organ of vision, like so many other parts of the body, suffers insidiously from excessive and long-continued over-indulgence in alcoholic beverages; it is the purpose of this paper to point out the early symptoms referable to the eye, which occur at a stage of chronic alcoholism when the amblyopia alcoholica has not yet become very marked. Such observations can best be made in the cases of private patients and among the better class of dispensary patients, since the lower classes are very apt to neglect seeking medical aid until vision has become very much impaired.

The eye symptoms produced are quite constant, and are sufficiently well-marked to be observed in quite an early stage of the condition which we call chronic alcoholism — a condition which may be defined as one in which the quantity of alcohol habitually and repeatedly taken exceeds that which can be assimilated, and results in producing toxic effects of greater or lesser intensity and after a longer or shorter period.

It is commonly stated and usually accepted that the maximum daily quantity of alcohol which, if properly diluted, can be indulged in every day without causing evil effects eventually, is an ounce and a half. This would represent about three ounces of whisky, about nine ounces of sherry, about a pint of light wine (claret, rhine wine, etc.), and about two or three pints of beer. But as is the case in the effects

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upon other parts of the body, much larger quantities are taken regularly by persons who never complain of symptoms referable to the eye, and who would not present any such symptoms if functionally examined. And, in like manner, the time during which alcoholic excesses can be indulged in before eye-symptoms show themselves, also varies. The frequent indulgence in non-intoxicating doses seems to favor the occurrence of amblyopia *ed abusu* much more decidedly than does the drinking of large quanties so as to intoxicate, at longer intervals. Whisky certainly causes the majority of cases in this country. In the great majority of cases the condition occurs in the male sex, which is as we would most naturally expect it, considering the much greater frequency with which men acquire the alcohol habit than do women. Almost always both eyes are affected, though the symptoms may present variations in degree of severity in the two eyes.

The symptoms are:

Conjunctivitis.
Injection of the ocular conjunctiva.
Congestion of the iris.
Spasm of accommodation.
Contraction of the pupil.
Photophobia.
Nyctalopia.
Glimmering sensation in bright light.
Scotomata (color and white).
Amblyopia.
Partial (temporal) atrophy of the optic nerve.

The *conjunctivitis* is of the catarrhal variety and is of very common occurrence in chronic alcoholism. It is peculiar in its "initiative" nature. Its severity is subject to changes from day to day according to the quantity of alcohol indulged in. The *injection* of the ocular conjunctiva is not merely a part of the conjunctivitis; it may exist independently of the latter, presenting a marked appearence and sometimes accompanied by *congestion of the iris.* There will then be found

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a well-marked ring of circumcorneal redness — the condition indicating an implication of the ciliary region in the vascular disturbance. As is the case with the conjunctivitis, these two symptoms depend largely upon the immediate effects of the quantity of alcoholic drink taken, so that they are especially marked after a debauch.

Spasm of accommodation is not infrequent in alcoholic subjects, and becomes noticeable, especially, because male adults are rarely otherwise subject to it. The amount of spasm seems largely to depend upon the quantity of drink on the same or the previous day; it may interfere materially with a functional examination of the eye in testing for errors of refraction, and may therefore necessitate the use of atropine or of homatropine before the accommodation becomes relaxed.

The *pupils* are apt to be *smaller* than usual in chronic alcoholism; during intoxication or after a debauch, the dilated pupils of acute alcoholic poisoning exists.

Photophobia and *nyctalopia* exists quite frequently; and a *glimmering* sensation, especially in bright light, is sometimes complained of. The photophobia may depend upon the conjunctivitis to which in some cases the congestion of the iris and injection of the ocular conjunctiva may be added as additional factors. The principal cause, however, is probably *hypuresthesia of the retina* — a condition which is held responsible for the *nyctalopia.* The latter symptom may be defined to be the ability to see better by dim light than by light illumination — a condition resembling what has been described as *retinitis nyctalopica.* While these patients may occasionally really have an increase in the acuteness of vision when the illumination is less intense, as a rule there is no increase, but rather a slight diminution in the acuteness of vision, with a less bright light; so that the improvement is merely apparent, and not real. But these patients feel very much more comfortable in a subdued light, and hence, imagine they see better. The influence of diminished illumination is quite often marked, and many such patients

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acquire the habit of wearing smoked glasses, often resorting to these without the advice of any oculist, because they cause the eye to feel more comfortable.

Quite early the existence of *central scotomata* can be demonstrated; that is, a small part of the center of the field of vision will be defective in its appreciation of color, or even of white. This symptom usually exists quite early, but it may require careful testing in order to be found. The portion of the field which will be defective is almost always a small oval with its long axis, placed horizontally, extending from the point of fixation to the blind spot, and partially or entirely including the latter. At first these scotomata exist only for green and red; later, these may be a scotoma for purple, and later, also, for white, that is, there will be no sight at all over this small oval area. These scotomata, whether for colors or white, are almost always negative or relative — not apparent to patient; they may, however, be absolute, and thus appear as constant spots before the eyes, just as in certain diseases of the retina. They are, however, almost always central. The patients may be conscious of color defect, but usually the color perception is good excepting this central scotoma. If in this early step they are tested for color blindness, as by Holmgren's colored skeins, they will not be found defective, and will match colors well. A number of such cases have, however, complained to me that everything appeared less bright to them than it had formerly, though they could distinguish colors quite readily.

Even though these central scotoma for colors or white are found, there may be no *diminution in the acuteness of vision;* but commonly some amblyopia becomes manifest, when the symptoms already mentioned are found. This reduction in the acuteness of vision again is almost always central, so that the circumference of the field of vision is not usually affected and peripheral vision remains good. The amblyopia does not, as a rule, advance rapidly; very often in the early stages $\frac{20}{40}$ or $\frac{20}{30}$ will represent the patient's sight. Even in advanced stages, total blindness from amblyopia alcoholica

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is uncommon, though this is probably because the patient has sought medical advice before such an extreme result has occurred and has reduced or stopped his alcoholic excesses. There is no constant relation between the amount of amblyopia and that of color scotoma. It is quite interesting to observe how quickly the amblyopia will respond to changes in the habit of the patient, and how, after a few weeks of abstinence from alcohol, the vision can be brought up from say $\frac{20}{40}$ to $\frac{20}{30}$, and how quickly also there is a response in the opposite direction when the alcoholic excesses are resumed.

In most cases of amblyopia *ed abusu* (60 to 70 per cent.), the ophthalmoscope reveals a well-marked picture. In the very early stages, no abnormalities of the fundus may be seen, or perhaps only a little hyperæmia of the disc or a slight swelling at its margins, with perhaps the appearance of white striæ along the blood vessels, especially near the margins of the disc. But even before an advanced period there is apt to be a well-marked and characteristic picture — a pallor of the temporal portion of the disc, due to partial atrophy — to a wasting of the fibres constituting this segment. This pallor must not be confounded with a certain amount which is physiological and is found in a certain percentage of normal eyes examined with the ophthalmoscope; there may, therefore, be cases in which it will be difficult to draw the line between the physiological pallor and the appearance of the pathological atrophy. But usually no such difficulty will be met with, and the ophthalmoscope picture will be a characteristic one.

For a long time nothing was known concerning the pathological anatomy of this condition; but this was first explained by Jamelshon and by Vossius in 1882 and confirmed by Nettleship and by Burge in 1884, and then by Edwards and Uhthoff in 1886. All these investigators found an interstitial neuritis — proliferation of connective tissue and secondary degenerative descending atrophy of those fibres of the optic nerve which pass from the temporal

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side of the disc to supply the macula lutea. The atrophy affects chiefly the nerve fibres of the fasciculus cruciatus. These spread from the temporal part of the disc to the region of the macula lutea; hence the occurrence of central scotoma and the form of the latter (oval horizontally).

ON PSYCHOSIS CAUSED BY NICOTINE.

Nicotine is the most important chemical substance contained in the West Indian plant, *nicotiana tabacum;* when pure, it is a colorless, easily soluble fluid of strong tobacco odor and very acrid, burning taste, is easily dissolved in water, alcohol, and ether, its reaction being strongly alkaline, and it forms simple crystallizing salts. It is said that Virginia tobacco contains the largest quantity of nicotine. Nicotine acts on the human organism as one of the most powerful poisons; the action of tobacco differs only in degree.

From experiments instituted in Professor Schroff's laboratory it results that the effects of nicotine on the healthy organism are as follows: Taken in doses of 1 to 3 milligrams, the alkaloid produced first an acrid burning sensation on the tongue and in the throat, with increased salivation, and a sensation of heat in the stomach, in the extremities, and in the whole body. Soon after this the phenomena are headache, vertigo, drowsiness, impaired vision and audition, accelerated and oppressed respiration. They were succeeded within half an hour or three-quarters of an hour after ingestion of the poison by an extraordinary feeling of relaxation and weakness, the face became pallid and the whole body as cold as ice; fainting fits and vomiting made their appearance. The symptoms increased to tumorous and chronic spasms of the respiratory muscles. After three hours the symptoms commenced decreasing, but secondary effects continued for several days. Subsequent experiments demonstrated that the first action of the poison is excitation,

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the ulterior action is depression and paralyzation. In the beginning the functions of the brain and of the spinal chord are enhanced, but this excitation is followed by relaxation and debility. The whole voluntary muscular system is subjected to this influence, which gradually extends to the heart, and finally to the vasomotorial system. Such are the effects of this redoubtable poison on the healthy organism, when taken in small doses of 1 to 3 milligrams. What may be the effects of the 1,200,000 kilograms of the same alkaloid, constituting the present amount produced on the whole surface of the globe? It is impossible to ascertain in an exact manner the number of men using tobacco, but it is asserted that approximately they number 800,000,000. Each of them consumes on an average 1½ grams nicotine every year, or 4 milligrams every day, some of them less, others considerably more. The fact that large doses of this amount are supported by man proves once more the adaptability of the human nervous system to injurious habits.

The first contact with the tobacco poison is always felt by the cerebral nervous system as painful and hostile, and its repetition requires a certain violence against nature. By not heeding this warning of the attacked nervous cell, and by repeating the essays with the necessary perseverance, the repulsive sensation gradually vanishes and the excitation remains as a stimulus which soon becomes indispensable. At last the irritation and debilitation of the cerebral nervous system reaches a degree in which privation is deemed a real suffering, and the same longing for renewed enjoyment of the poison manifests itself as is noted in alcoholists and morphinists.

The action of nicotine differs considerably, not only according to the different classes of tobacco, but also according to its different applications. Smoking only allows the products of decomposition connected with it to exercise an influence, although several cases are known, not only of neruous erethism, but even of perfect psychosis, caused by excessive tobacco smoking. Kjellberg had several opportuni-

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ties of convincing himself that even a too abundant use of tobacco for snuffing may originate psychic phenomena.

But the greatest danger lies in the use of tobacco for chewing. The ordinary shape for this application is tobacco in rolls. It is true that small doses of it may be taken without causing psychic injuries. But as soon as the daily use exceeds 10 to 12 grams of genuine and good tobacco, the field of pathologic phenomena is approached, and the sensation becomes an abnormal one. This transition is effected more rapidly in case pulverized snuff is used for chewing. In the last decades the use of snuff for chewing has considerably increased in various northern countries, especially among mariners, manufacturing laborers, etc.

From a number of cases observed by him, and in which a continued daily use of from 20–27 grams of tobacco in rolls, or in snuff, had been ascertained, Kjellberg has reached the conclusion that the similarity of symptoms points to a specific psychosis caused by the use of tobacco, "*nicotinosis mentalis*," a real primary mental disease with its own peculiar symptoms, which are clinically distinguishable, and which give it a place among mental intoxications. "*Nicotinosis mentalis*" is described by Kjellberg as follows:

Among general symptoms a painful sensation of weakness and impotence is to be noted, accompanied very soon by hallucinations, maniacal ideas and suicidal inclination. The disease has a prodromic stage and three distinct stages differing from each other.

Prodromic stage.— The patient has felt unwell for some time, his general disposition changes, he shows an unusual uneasiness which may pass to a transient state of anguish. He sleeps little, and the ordinary occupations are repugnant to him. He is disposed to indulge in somber reflections, is tormented by palpitations of the heart and unusual anxiety. This condition continues for one and one-half and three months, when psychosis sets in.

First stage.— The patient's attention is seized by lively hallucinations, and he is entirely occupied with these new and

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surprising perceptions. He hears voices, visions appear to him, he has a sensation as though something different from himself was inside his body, and strange notions take hold of his conscience, from which he can't free himself. False, fixed ideas often combine suicidal tendencies; his mood is always gloomy; the patient feels tired and exhausted, inclined to loneliness and rest; at times he has short fits of fright. Otherwise he is quiet and obedient, talks little, and never without being previously requested to do so, but then what he says is logical and shows good perception. He complains of painful sensation in the heart, of wearisome insomnia and of voices that give him no peace. Nutrition is not impoverished, for the patient usually eats plenty, although he often speaks of bad appetite and spoiled food. After six or seven months the disease enters a new stage.

Second stage.— The mental disposition improves, and we find the patient talks hilariously of his perceptions. He relates the visit of angels, he has seen heaven, but also hell and the evil spirits. He sings and talks to himself without interruption in a low voice; motions become more vigorous, and he moves about with a certain agitation. The hallucinations of brain and vision are on the increase, and the patient is constrained to execute involuntary motions. This condition is periodic, the periods usually lasting from two to four weeks with intervals of indefinite length. In such times the patient lays down prostrated and lazy, his mood is gloomy and discontented, his attention diminished, his perception very slow, his language distinct and logical, but hesitating. This stage may continue for a long time, but unless convalescence sets in, it passes gradually into a last stage.

Third stage.— The intervals pass each other and periods of raised disposition disappear by degrees; the mental disposition remains quiet, perception is very limited. Hallucinations continue, and the patient gradually sinks into a state of general psychic debility, while his physical condition improves, and he may even be partially serviceable for ordinary occupations.

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With regard to prognosis, it is not entirely bad during the first and second stages. But in the third stage recovery is not to be expected any more. Therapeutic treatment requires, first of all, absolute deprivation of tobacco, with the understanding that it should be enforced by degrees, the patient being otherwise subjected to very painful sensations and much suffering. With this, substantial diet, motion in the open air, and use of mineral waters are to be recommended.—*Pacific Record of Medicine and Surgery.*

ALCOHOL IN CHILDHOOD.

The Church of England Temperance Society has rendered a great service by the publication in pamphlet form of answers to the following declaration, addressed to the medical profession: "I fully agree with the principle that alcohol is not necessary or desirable for children as a dietary, but should only be used by them under medical advice." He had already received in reply about 300 answers in the affirmative.

The following are some quotations:

Sir HENRY W. ACLAND, M.D., F.R.S., Regius Professor of Medicine, Oxford: "Alcohol, except in the mildest of possible ways, was not only unnecessary for children, but thoroughly injurious; and he would say, so far as his knowledge went, there ought to be ample evidence to prove that in cases where it had been constantly given to children it was perfectly obvious that it was distinctly injurious to children, and, therefore, that was thoroughly proved. The question to be raised in the afternoon as to the use and abuse of alcohol producing inherited and constitutional injury in children, was one of the most difficult and profound questions of the day."

Sir HENRY THOMPSON, F.R.C.S., Surgeon to the King of the Belgians: "I must deny myself, I confess unwillingly, the opportunity you are good enough to offer me, of expressing in public an opinion concerning the employment of alco-

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holic drinks in the dietary of children. My opinion may perhaps be recorded here, and it is based on wide experience, that during the earlier years of life the practice in question is invariably undesirable, indeed, more or less injurious. If alcohol be taken at all during childhood and youth, it ought to be under the sanction of high authority, and should be regarded by the child, as well as by his friends, as a medicine, not as an article of diet, under which latter denomination no child should be permitted to regard it. He will learn soon enough that many forms of it are taken as a luxurious adjunct to diet, but he is badly trained if he does not also learn that habitual indulgence in the habit surely produces more or less serious defects in almost all constitutions. Ill-health in later years is largely due to a life of conformity to the error of regarding alcohol as a necessary article of diet, and one of the first duties of a parent is to secure his offspring from needless evils of that kind. I say nothing of the moral evil associated therewith, not less, but more, important. I will only add that were it within our power to rear the rising generation with the same view and with the same care we entertain when breeding the lower animals—viz., for the purpose of cultivating all their highest qualities, and thus of improving the race, I am certain that no alcohol would be permitted to enter into the scheme of our dietary, or ever be regarded as either food or medicine suitable to be frequently taken at the caprice of the individual."

Sir ANDREW CLARK, M.D., F.R.S., President of the Royal College of Physicians: "I fully sympathize with you in your view of the supreme importance of temperance work among children. Religion, education, and temperance constitute the three closely-related and necessary agents for the building up of a completely developed and healthy human being. There is room for difference of opinion concerning the place, power, and use of alcohol in adult life; there is none in respect of the life of children. The habitual or frequent use of alcohol in their diet is a serious and unqualified evil."

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Dr. HACK TUKE, Examiner Mental Physiology, University of London: "I am strongly of opinion that, while alcohol may properly be employed for even the young under medical direction, it is highly undesirable to allow it to be used in any form, as a beverage, by the young of either sex. I have acted on this principle in my own family, and should suppose there is not much difference of opinion in the medical profession as to its propriety."

Dr. LAUDER BRUNTON, Assistant Physician, St. Bartholomew's Hospital: "I feel very strongly that the use of alcohol, in any shape, is inadvisable for healthy children or healthy youth. In disease, even in children, it is sometimes invaluable as a remedy, but I think that great care is required not to continue its use beyond the time when it is absolutely necessary. I have hitherto seen no reason to change the opinion I expressed many years ago, that healthy men, as a rule, are better without it; and this applies still more strongly to children and youth."

Dr. OCTAVIUS STURGES, Physician to Westminster Hospital and the Children's Hospital: "If I had ventured upon any remark at all at your meeting, it would be to protest against the vile decoctions of port wine and 'malt extracts,' or some other stuff, which are so extensively advertised and sold, not only for purposes of secret drinking among adults, but also, as is within my personal knowledge, as a tonic for children. If your meeting were to unite in a protest against this one detestable practice, the authority of the well-known physicians attending it is surely weighty enough to send forth a salutary and much-needed warning to mothers of all classes alike. Of course it will be understood that I am not attacking any 'mixture' in particular, but the practice of mixing alcohol with reputed 'tonics,' especially in the case of children."

J. CROFT, Esq., F.R.C.S., Surgeon to St. Thomas' Hospital: "I entirely agree with the printed form which I have signed and returned. The lessons in total abstinence should

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be taught in childhood. Children should be made to look upon stimulants as temptations to be avoided. The mid-day Sunday glass of beer or wine should be particularly attacked. Boys go almost straight from the table to church; under such circumstances the effect of the stimulant is, morally, most injurious. The harmless, as it is often called, glass of beer, becomes the cause of impure thoughts. Make another attack upon the example set by men and parents in taking stimulants between meals; that habit is physically and morally (or spiritually rather) most disastrous. My experience as a surgeon of surgical diseases in children, traceable to alcoholic parents, is very limited. I have seen children who are the subject of stone in the bladder nearly ruined as regards the chances of cure by the gin given them by their parents. The parents meant kindly, but acted under a grievous misapprehension. We at St. Thomas' Hospital do not make stimulants integral parts of the dietary of children. Stimulants (wines) are only given in exceptional cases."

Dr. MORE MADDEN, Physician to the Children's Hospital, Temple street, Dublin:—"The evil resulting from the prevailing intemperance of the young, as well as the old, should induce us to warn those whom our counsel would influence against that custom of giving alcoholic stimulants as a *bonne bouche* to children, which is so general in its practice amongst all classes, and so calamitous in its results. Even in those exceptional cases in which such stimulants may be necessary for children, I would repeat that we should never sanction their administration save under the guise and and in the defined doses of other remedial agents—my long experience in hospital and private practice, at home and abroad, having amply confirmed the view expressed in a work of mine published many years since, that it is physiologically wrong as well as morally unjustifiable, even to allow a healthy child to taste alcohol in any form."

Dr. SAMUEL WILKS, F.R.S., Consulting Physician to Guy's Hospital: "I have always held to the dictum that

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children should be brought up without any alcoholic drinks, leaving them to judge for themselves when they arrive at adult age. This rule would no doubt be very largely acceded to; but it is in another aspect that the question is forced upon the attention of the medical man. It is whether delicate children need the assistance of wine in restoring them to their natural vigor. Now there is a widespread belief in its efficacy in these circumstances, and especially as regards port wine. Amongst the poor if any lady bountiful bestows upon them a bottle of port wine for a sickly child they regard it as a priceless gift, and having a power which is supreme. Now, I have no reason to say that wine is of any value in affording strength to the delicate child. On the contrary, I regard it as hurtful if it be only by deadening the appetite, and neutralizing the craving for food which is natural. I especially set my face against the too frequent custom of a child being sent to boarding school, and there treated on exceptional principles."

Dr. LANGDON DOWN, Physician to the London Hospital: "The Committee of the London Hospital issues a report of the amount of stimulants given by each physician, and analyzing eight years of such reports. The remarkable outcome is that the physicians who gave the smallest quantity of stimulants have the lowest mortality, and pass more patients through the hospital; that whereas some of the physicians gave 8 oz. of wine per patient, others gave 43.6 oz. to each patient. The mortality of the minor amount is 14.7 per cent.; of those giving the major amount, 18.2 per cent. The average residence of those taking the minor amount of stimulants is 27.9; of those taking the major amount, 31.8 days."

Dr. THOMAS BARLOW, Physician to University College Hospital and the Children's Hospital: "I believe that in certain cases of acute disease in children, given for limited periods, alcohol is sometimes very valuable; but the question as to its employment during prolonged periods of delicate health or convalescence from illness, and as an ordinary ar-

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ticle of diet in childhood, requires, in my opinion, a very different answer. There is one reason why we ought to be especially jealous of the prolonged administration of alcohol even in small quantities to children, and that is the risk of evoking the drink craving in early life. We are all alive to the risks of morphia craving, and of the craving for other sedatives, but the aggregate of mischief induced by all these sedatives is trifling compared with that induced by alcohol. The responsibility of starting in a child the craving for this drug becomes much more serious when we find to our dismay that the factor of heredity comes into play either in the direction of alcoholic proclivities or of the spasmodic neuroses."—*Temperance Journal.*

THE opium habituate maintains a semi-physiological condition while under opium influence. It is only when it is taken away from him that the true and pathological condition of his psychical, sensory, and ganglionic nervous systems, especially become apparent. Remotely, it is the poison that has made the trouble. Immediately, it is the repetition of it in quantities and at intervals to which the abnormal nerve centers have become accustomed, that masks the real malady and gives the patients relief.—*Dr. Hughes.*

INEBRIATES have the delusion that they are always able to stop at will, and are not diseased. They have a dread of being deprived of their liberty, and the common delusion of persecution, and fear they will be made to suffer unjustly.

PROCEEDINGS OF THE NATIONAL TEMPERANCE CONGRESS, 1890. 12mo, 425 pp., cloth, $1.50. New York; FUNK & WAGNALLS.

In this volume of 425 pages will be found every shade of anti-liquor views discussed by many of the leading reformers and pioneers of the temperance cause. The volume as a

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whole is a very interesting psychological study, bearing on the history of the cause.

THE BACTERIOLOGICAL WORLD.— A monthly magazine. Price $3.00 per year. Published by DR. T. J. TURNER, Mexico, Mo.

The editor, Dr. Paquin, of the Missouri State University, Columbia, Mo., is a thorough bacteriologist. The magazine will be devoted to the study of the diseases caused by micro-organisms. It will be a most useful educating factor in the medical profession of America.

THE SOUL OF MAN; BY DR. PAUL CARUS. 480 pages. Price, $3.00. The Open Court Publishing Co., Chicago.

"The "Soul of Man" treats of the most salient psychological problems, presenting them in their connection with philosophy, physical science, including mechanics, physiology, experimental psychology (hypnotism, etc.), religion, and ethics. The physiological chapters of the book are profusely illustrated, so as to economize the time and save the patience of the reader, who will find the most important facts and results of scientific investigation that have reference to the activity of the human soul, collected and systematically arranged in a comparatively small space and handy shape.

Dr. Carus discusses the psychological problems from the standpoint of positive monism, at present the almost generally accepted view in philosophy and science. The statement of his position is made very clear and even pronounced. Yet this does not restrict the usefulness of the book to those readers alone who will accept his views. The mere collection of materials which can nowhere be found so conveniently compiled and presented, will make the book welcome to all who are interested in psychology, however widely their opinions may differ from those of the author.

As to the importance of psychological topics, no one can

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deny it. It has been truly said that knowledge is power, and knowledge of the human soul is power to every one who has to deal with men. Dr. Carus says on page 323 : "Psychology is a study too much neglected ; it is indispensable for every one who has to deal with people ; and who has not? The physician, the clergyman, the employer of labor, the officer in the army, the professor, the merchant, the banker, almost every one has to deal with people, and, above all, the lawyer. Self-knowledge is not sufficient to make us free, it must be self-knowledge *and* the knowledge of other people ; it must be self-knowledge in the broadest sense, knowledge of the soul, of the motives that work upon and can be employed to affect man's sentiments. It is only knowledge that can make us free, and knowledge will make us free. And because it makes us free, knowledge, and chiefly so, psychological knowledge, is power."

OUTDOOR LIFE IN EUROPE.— Sketches of Seven Summers Abroad.— By Rev. Prof. E. P. Thwing, M.D., Ph.D., of Brooklyn, N. Y.; 12mo, 280 pp, cloth, gilt back, $1.00. The fourteenth thousand.

This is a series of picturesque recitals of travel, interspersed with brief biographical, historical, and critical observations, and the whole spiced with a humor that keeps the reader's attention awake to the close. It is a volume of great charm, of unflagging interest and fascination. It shows a wonderful talent for panorama, a rare discernment of vision in these many lands (from Norway to Naples, from Russia to Spain), magic and music in setting it forth. I like it for its broad range in manner and matter ; its keenness of anecdote and quotation ; its captivating, swift movement ; most of all for the constant touch of *reality* we feel in its pages. There is no artificiality, dreary, stiff, catalogue work, into which almost all books of travel fall. It can be had of the author, post-paid, for one-half the publisher's price. A list of Dr. Thwing's other publications, 75 titles, sent free.

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TEXT BOOK OF HYGIENE BY DR. ROHE, F. A. Davis of Philadelphia, Pa., publisher, noticed in our last number, has received the most flattering endorsements from the medical press. It is practically the best American work on this subject published.

Homeletic Review, published by Funk & Wagnalls, New York city, is a choice magazine of theological literature that is of much interest to all readers.

The *Popular Science Monthly for February, March, and April*, contain some excellent medical papers of unusual interest. No other publication is so valuable for its general science news as this monthly.

The *Literary Digest*, published by Funk & Wagnalls, New York city, is a carefully prepared summary of everything in literature and news weekly. The best thought of the best writers are culled and put before the readers. No more valuable paper could come into any fanily. The subscription is only three dollars a year.

The *Evolution of Sex*, by Profs. Geddes and Thomson, Humboldt Publishing Co., New York city, is one of the most fascinating works which has been published. The first part treats of male and female ; the second, to analysis of sex-organs, tissues, cells ; the third, the processes of reproduction ; fourth, the theory of reproduction.

Dr. Daniel G. Brinton of Philadelphia, has now in press a work entitled, " The American Race, a linguistic classification and ethnographic description of the native tribes of North and South America." It is the first attempt ever made to classify all the Indian tribes by their languages, and it also treats of their customs, religions, physical traits, arts, antiquities, and traditions. The work comprises the results of several years of study in this special field.

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Editorial.

INEBRIETY IN CHARITY HOSPITALS.

The manager of a large city hospital refused to admit an inebriate, who was ill and intoxicated at a low boarding house. His reasons were, that the hospital was for the sick and unfortunate, and not for the vicious voluntary drunkard. Later, this poor inebriate was turned out of the house, and soon after was found dead from exposure. The coroner's jury found no one responsible. Later, it appeared that the father of this poor victim had given a large sum of money to endow a free bed in this hospital.

Any city hospital that admits the sick and injured, and depends for its support on the benevolence of the public, has no right to make a discrimination depending on the causes, and exclude any one who is sick or injured on the supposition that the disability might and should have been prevented. Railroad accidents are not unfrequently the result of criminal carelessness, and yet the hospital cannot refuse admittance for this reason. Why should it presume to refuse admission to inebriates because apparently their disorder is self-induced? Cases of mania from spirits belong naturally to insane asylums, and a city hospital may not be fitted for this class; but all cases of disease and injury following the excessive use of spirits should be received, and the hospital who refuses to do so has no claim on the sympathies of the benevolent. The drink victims are the products of civilization, and the products of a superstitious public opinion, which permits the free use of alcohol to any one at any time, no matter who he is, or what the conditions may be, to not only pauperize himself, but to bring on incurable diseases of both body and brain.

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This very hospital which refused to admit an inebriate because his sickness was brought on by his voluntary acts received several thousand dollars from the licensed fund yearly, and yet they presume to discriminate as to the moral and physical causes of the persons admitted.

Obviously, its medical managers have ceased to be scientific men, and the hospital cannot be called a public charity in any broad sense. Often public sentiment is far in advance of some of these narrowly-managed charities. Recently a wealthy man begged for the admission to a city hospital of an inebriate found in a comatose state in his store. The hospital refused, and the inebriate was sent to an almshouse. The indignation of the gentleman has turned into a bitter persecution, which has most severely crippled the hospital.

There seems to be no reason in this age for any narrow theories of what inebriety is, or is not, in the management of public charities. The only question to be decided is, the present condition of the patient in the question of admission.

MASSACHUSETTS HOSPITAL FOR DIPSOMANIACS AND INEBRIATES.

The first report of the trustees gives the act establishing the hospital passed in 1889, and the progress up to date.

The act concerning the commitment and control of patients is practically the same as that in force for the control of lunatics.

In section six occurs the following sentence, after stating how such persons shall be committed and the evidence required by the judge. It says, "*that such person or persons are not in bad repute or bad character apart from their habits of inebriety.*"

Such a distinction is a refinement of science that implies very hazy conceptions of inebriety. Should the judge be technical to carry out the letter of this clause, the hospital

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would seldom have any patients. The search for inebriates of high moral character and repute would be a most interesting one, and no doubt throw much light on some doubtful questions of science.

The commitment of each person for two years, with provision to go out on parole, is an excellent measure. The power of appeal seems cumbersome, but no doubt in the future this will be changed as experience dictates.

Altogether, the act is very promising and practical. The trustees have bought a farm of ninety acres at Foxborough, Mass., and selected as superintendent Dr. M. Hutchinson, who has had large experience at the Taunton Asylum for insane. The plan of buildings is to be that of cottages for the purpose of classification. The estimates and contracts have been made and let, and the work will be completed by April, 1892. Patients will be admitted at that time.

This is the most important public enterprise for the defective classes that has ever been tried in Massachusetts.

The managers are wisely beginning in a careful way. From experience alone can they learn the practical needs and methods of such an institution.

The care and treatment of insanity, idiocy, and pauperism are practically simple compared with the inebriate. The medical and legal measures, building appliances, and executive skill essential to treat this class, can only come from experience and growth. The board of managers are to be congratulated on the good beginning in this hospital.

A CURIOUS FACT IN HEREDITY.

In a contested will case, it appeared that the testator was never intoxicated except when he drank brandy. He used wine on the table for years, and drank other forms of strong spirits, yet never seemed to be disturbed mentally or be unconscious of his condition except when using brandy. In answer to the question why he appeared sane at all other times, and only insane and intoxicated when using brandy,

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it was ascertained that his father and grandfather were inveterate brandy drinkers, and that one brother became insane and died from using brandy. The testator had said that, while he liked the taste of brandy, it always went to his head and made him stupid. The conclusion was reached, that he had inherited from his parents a peculiar sensitiveness to brandy, some peculiar predisposition which favored rapid intoxication from this form of spirits, and not from any other.

This seems to be the explanation of the commonly observed fact, that many drinking men can not use certain forms of alcoholic drinks without becoming intoxicated. In a case of this kind, a man could not drink beer without being stupid, but could use whisky and other strong spirits daily with no such effects. Two grown sons of a man who drank champagne all his life, were always delirious when using this form of spirits. No other drinks seemed to affect them in this way. The transmission of a hyper-sensitiveness to some form of alcoholic drinks is theoretically along the line of many similar facts, and is a perfectly rational explanation of the unexpected and profound intoxications which are seen among moderate drinkers who may change to a new form of drink. Such a case is now exciting much attention in a Western village. A clergyman who had drank wine at meals for twenty years, and was never intoxicated, was given some hot rum after exposure to a storm. He became wildly intoxicated and produced a great scandal. His father was a West India sugar planter, and a rum-drinker. It is a fact often observed that moderate drinkers of beer, wine, or whisky will change the form of drink and rapidly become abject inebriates, and later have some dim realization that they should not have used these special drinks, and remark, "that father used to take such and such drink, but I could not."

A wine-taster found that cider brandy would speedily intoxicate him, and have a different effect from any other form

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of spirits. His father was a New England farmer, and used this form of drink all his life.

It is a common fact that children of inebriates are either very sensitive to all forms of alcohol, or have an intense aversion to its taste and effects. In a few cases the nervous system is very slowly affected by alcohol; a low grade of nerve force is present, and large quantities of spirits have little or no influence for a time. Such a condition appears in descendants from alcoholics where states of race exhaustion have appeared. The field of heredity along this line is rich in new facts and new principles that reveals an exactness and certainty of movement that is both startling and astounding to the observer.

INEBRIETY AT THE SOLDIERS' HOME.

The recent publication of two incidents in the same paper at the same time make it seem probable that such events are not uncommon.

The first incident was the death in the poor-house of a brave soldier who had been recently sentenced to this place for drunkenness. He had served through the war, and was made an invalid by concussion from a shell. He drank spirits soon after for the first time, and continued to drink on to death. He had been expelled from two Soldiers' Homes for this offense, and served many sentences in jails and workhouses for a similar cause.

The second incident gave the history of a brave man who rose from the ranks to be colonel of his regiment. After six months' starvation in a Southern prison he was discharged, an invalid. Then he began to use spirits to excess, and lost his property, and was placed in three different Soldiers' Homes, and expelled from each for inebriety. Finally he led a vagrant tramp life, and was often sentenced to jail for drunkenness in many cities of the North and West. At last he was arrested in a state of great destitution and com-

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mitted to jail for six months. The judge delivered a severe lecture to him on this occasion, pointing out the folly and disgrace of his past conduct, and warning him to reform and change his life.

Here were two brave men who became inebriates as the direct result of injuries received in the service of the country. They were expelled from the Soldiers' Homes on the supposition that this disability was voluntarily acquired and could be controlled by the will any time. They were despised, persecuted, and condemned as vicious, willful, criminals, who preferred to drink spirits and live wretchedly rather than have comforts and be respected.

The managers of these homes assumed that inebriety was a moral disorder, to be reached by moral means; and, instead of applying moral remedies such as moral persuasion and religious faith, used force and fear, and disgraced the victim, and increased his pains and sufferings to give him strength to will himself back to health. The managers assumed ability to discriminate between moral and physical disabilities, and decide that the drink craze was a mere moral lapse, under the control of the free will to check at pleasure.

The Soldiers' Homes are provided by the government for the care and protection of its brave defenders, who from misfortune and disability are unable to support themselves. If the soldier is insane he is placed in a special asylum and receives special care. Beyond this no discrimination is made, other than the soldier shall have been in active service and honorably discharged. If he has been disabled by injuries or diseases contracted in the service, he is welcomed at the home. Why should the managers assume that the persistent determination to poison themselves with alcohol by these poor, exhausted inmates should render them unfit for government care and control. The persistent attempts at suicide by any inmate, if treated by expulsion from the home, would rouse great indignation and condemnation. The inebriate is of the same class of cases, only the destruction is slower and more certain. The suicidal impulse may break

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away any time from causes unknown, but the drink impulse grows in intensity from each gratification. Every poor soldier expelled from the Soldiers' Home for this cause is turned out to die in conditions of the greatest wretchedness and suffering.

Expulsion of the inebriate soldier for inebriety and insubordination following from the drink effects is stupid barbarism. The real value and power of the home to care for and protect its inmates becomes a farce, and the inmate is destroyed to sustain a voluntary discipline, which is no discipline. The Soldiers' Home which cannot control its inebriates as well as its insane or suicidal inmates, needs reform and change. It in no way represents the scientific intelligence of the day, or applies the principles of humanity which a grateful government intends. Beyond all sentiment, the facts of science show that the privations, irregularities, diseases, and injuries of a soldier's life especially favor and predispose to states of brain exhaustion, for which inebriety is only a symptom. The brain injuries from concussion, from starvation, from disease, from wounds, and many other causes are very often manifest in intense craving for alcoholic spirits.

Some central and psychical degeneration is going on, and alcohol is a most soothing narcotic. The poor victim can get rest and relief from no other source; he is powerless to resist this diseased impulse. Like the suicide, he is driven by an internal force that dominates the higher brain and every condition of life, here and hereafter. He is diseased, disabled, and incompetent to control his life and conduct where it conflicts with this impulse. Such men need restraint, control, and care. They want protection from themselves, and it is the duty of the government to help them. The police court treatment of inebriety is a disgrace to our present civilization, and only tolerated by an apparent need to do something and dense superstition. Hospitals and homes for invalid and disabled soldiers who expel their inmates for drunkenness merit the condemnation of every intelligent citizen.

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Science, civilization, and humanity protest against the injustice of turning out the poor, brain-exhausted soldier for such causes, to die on the streets, in jails, and almshouses, and be a burden and peril to all. The two cases mentioned show that, scientifically, a sad blunder has been made; that in view of the teachings of science and the ever-widening humanity of this closing century, such a blunder is inexcusable and demands instant measures for change and relief.

ANIMAL POISONS IN INEBRIETY.

Not unfrequently an inebriate comes under treatment, suffering from deliriums that are intense, obscure, and of short duration.

The patient will be apparently clear and sober when admitted, and in an hour exhibit low muttering delirium, talk to unseen parties, complaining, or laughing at his skill in deceiving others. In a short time this passes away, only to return at uncertain intervals, for one or two weeks. These low deliriums are changeable, going from one topic to another, but usually they refer to deeds of strength and cunning, to be consummated in the future. He will repeat some expression of his power to do this or that in a high tone of voice, then in a lower tone, until almost in a whisper; after a pause some other topic would be repeated in this way. Some of these deliriums would refer to sexual vigor, or muscular power; others would be of capacity to drink more spirits than his companions. In eight cases of this class which I have examined, six were excessive beer-drinkers, and spirit taking had been of recent origin. The other two were wine and spirit-drinkers, all of them were gourmands and plethoric, and suffered from nutrient disturbances.

In one case these deliriums came on after every drink excess, and passed aways in two days or less. Pesit's suggestion that the toxic effects of alcoholic drinks were due in some cases to ptomaines or leucomaines originating in the process of fermentation, seemed to be the explanation of

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many of these cases. Acting on this hint, some of my later cases have been treated with saline purges, and turkish bath, which seemed to cut short the delirium at once. The recovery was rapid from this time. It seems very rational to suppose the delirium was due directly to the presence of some poison generated in the system, and acting upon the brain other than alcohol.

The delusions and deliriums of inebriates are usually all of a certain class, and run a uniform course, but the symptoms observed in the above cases were different and suggested a different origin. In all probability the cases of inebriety that are associated with nutrient perversions and dyspepsias, are often complicated with animal poisons generated in the body, that peril the cases most seriously.

SOMEWHERE in 1760, a commodore in the French navy, while intoxicated, married a woman at Charleston, South Carolina. After a few weeks he sailed away and never returned. He supported the woman, and educated a boy which was born of this marriage. The boy became a cotton planter, and drank wine freely. His daughter, an only child, ran away and married a tutor on a neighboring plantation, who was from Massachusetts. She was driven from home, and the father drank severely the latter part of his life. The tutor came North and became a woolen manufacturer. He had three sons, who all followed him in this business. Four children of these three sons were inebriates. In the third generation from the tutor, five inebriates appeared. In the fourth generation, two inebriates, and one insane, and one epileptic were present. In the fifth generation there is one excessive drinker and six moderate drinkers. Every generation has had inebriates and neurotics of various degrees. Several women were eccentric and never married. Many of the men have been miserly, and only drank late in life. Three of them attained great wealth, and all were fond of music and dancing and travel. In the third and fourth generations several members of the family followed the sea.

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Two very curious facts appear. The inebriety of the French ancestor seems to have made a permanent impression on all the descendants. The tutor's father was a Yorkshire woolen manufacturer who came to New England in 1750, and pursued the same business. In every generation several members of the family followed this business, showing a persistence of similar occupation. In the fifth generation seven descendants are engaged in the woolen manufacture, either as proprietors or workmen. Marriage with other race stocks seems not to have neutralized or changed these hereditary traits to any great extent. The families have not been large, but as a rule they have lived long lives. The statistics are not full enough to sustain positive conclusions, yet the general facts point to a distinct alcoholic heredity, and an inherited predisposition to follow the woolen trade.

DISCUSSION OF INEBRIETY AT THE INTERNATIONAL MEDICAL CONGRESS AT BERLIN.

Dr. Kahlbaum, in the Section of Psychiatria, raised the discussion on this subject as an international subject. The treatment of alcoholism has appeared in a scientific form in several countries and been studied by such scientists as Magnan of France; Baer, Pelmann, and Binz, in Germany; and Huss, in Scandinavia; Kerr and Richardson of England; Parrish, Crothers, Mason, Day, and Wright, of America. He pictured the reputed drunkard, and related the painful position the psychiatrist was placed when asked to advise in such cases. Such cases were either diseased before they became drunkards, or became diseased by the drink. In either case the great misery complained of is insatiable desire for alcohol, which they cannot subdue or avoid.

The usual consequences of alcoholism are tremor, paralysis, epilepsy, partial or general mental disorder, which incapacitate the inebriate for any other place than a medical institution. As soon as these morbid phenomena disappear,

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the patient is allowed to leave the hospital under the presumption of being cured, but he has no sooner gained his liberty than he perpetuates the same error. If he were retained longer in hospital there might be more hope of cure, but the institution is usually glad to get quit of him, or the patient has lost all patience with his detention and his own desire is to leave. It is true that the institutions for inebriates are far too limited, and at the same time exposed to danger. The best thing that could be accomplished would be a general consensus to have an island appropriated for these subjects of intemperance. The presumption of this extraordinary thirst for alcohol is based on the theory of a molecular change in the nervous system, which disturbs the equilibrium when the alcoholic derivative is withdrawn after a long continuance of its use. When the unsteady molecular stage has been reached, the alcoholic desire is intense, and nothing short of total abstinence will overcome it. If the organic changes have not extended too wide, this molecular condition may soon be restored to its former equilibrium by its discontinuance. But where changes have taken place a longer time will be necessary for restitution. Absolute denial of alcohol is the rational mode of treatment for alcoholism, but this must be continued long enough to restore the morbid changes. Nothing short of a medical combination with the assistance of restraint such as can be found in well-organized asylums for inebriates. Such places would be equally valuable for morphia and other drug inebriates. In America this most difficult problem has been studied and many eminent physicians have contributed valuable papers which throw great light on this subject. He urged that medical scientists should take up this subject and interest communities and legislators to establish homes and asylums for the medical care and treatment of such cases.

Dr. Phustanos of Greece followed, giving a history of the ancient efforts to check inebriety by the Athenian law-makers centuries ago, saying that to-day inebriety was the most perilous scourge of the Hellenic lands, where ages ago the

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most advanced and heroic anti-scholastic legislation existed. While this discussion attracted but little attention in this great assemblage, it was evident that the subject had come into the field of scientific study to stay.

At the international congress at Washington a paper on this subject was not considered appropriate for the section on mental diseases, and was read in the section of practice of medicine, as the only place for irregular productions. Both the *Lancet* and *British Medical Journal* published this paper before it attracted attention in this country. The anglomania medical men are often far in the rear of scientific advance, when they close their eyes to all American attainments until they are recognized abroad. Many American students of this subject are unknown at home until they are recognized by some foreign paper or authority.

Fortunately, this is dying out, and inebriety, like many other topics, is demanding a recognition and receiving it both at home and abroad.

At the next international congress our association should be represented, but under any circumstances the subject will be discussed as one of the living issues of the medical world.

THE inebriate is always followed by a generation of descendants, that have marked brain defects, lowered morality, vitality, and longevity, with a sharp tendency to exhaustion and alcoholic excess. In the next generation insanity, idiocy, and epilepsy, appear — criminality and suicide are common. In the third generation, drink mania, paralysis, insanity, and criminality end the generation. Unless marriage with a healthier stock follows, the race becomes extinct in the second or third generation. — *Nortet.*

AT Marylebone police court in London, a woman was sentenced for inebriety and disorder to jail for one month. It was found by the records of this and two other courts, that she had been arrested and sentenced for similar offenses one hundred and forty-two times before.

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Clinical Notes and Comments.

HEREDITY.

The editor of the *Voice* asked advice regarding the statements of a moderate drinker who claimed that no injury could follow his use of spirits. The distinguished editor of the *Alienist* and *Neurologist*, Dr. Hughes, wrote as follows: The gentleman who speaks thus boastfully of his immunity from the consequences of habitual alcoholic indulgence, and confidently as to his constitutional immunity, utters the boast and expresses the blind confidence of physiological ignorance. He is another illustration of the long-ago proclaimed admonition, that "whosoever is deceived thereby is not wise," for the physical and psychical sequence of long-continued alcoholic indulgence proves with the unerring conclusiveness of Holy Writ that wine is a mocker, for even when it is taken so moderately as not to unfit the partaker during a natural lifetime for the ordinary duties of life, or immoderately by certain extraordinary constitutions of peculiarly strong nervous stability, it makes its lasting impression in neural scars that mar the life of the drinker's descendants. This is seen in the unexpected appearance of chorea or St. Vitus' dance, epilepsy, insanity, and other psychical or physical disorders of the nervous system, for the first time in the family history, after the inebriety of the parents, and in the lesser form of neural instability, such as nervous debility, general nervousness, fidgety disposition, defects of innervation in the trophic nervous system, entailing unequal shortening of limbs, through defective development of certain tendons and muscles, visual defect, etc.

A man may congratulate himself on his capacity to go about full and yet not be perceptibly drunk at any time in his life, but alcohol gets its baneful work in all the same on

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his descendants. They will not have the inherent stability of nervous organism, the strongly-knit and powerfully resistive nerve centers bequeathed to him by an abstinent ancestry whose moderate indulgence was every day compensated for by a hard out-door life, in which more sunlight and fresh air and longer hours for sleep and less rush and push and mental strain and business worry enabled the restorative powers more effectually to efface each day the violence done by alcoholic indulgence to the delicate texture of the brain, the spinal cord, and the nerves.

It is extremely difficult for a man to so use alcoholic beverages as to not harm his organism. The worst feature of alcoholic indulgence is that of social drinking and of exciting the heart and brain to renewed activity when it is inclined to rest, as at banquets, thus goading these vital organs to renewed activity, when, in accordance with the natural laws of their being they are pleading for rest. When men resort to stimulants they generally need rest and sleep instead.

The questions have been answered by science for years. Morel has given a correct illustration from nature of alcoholic degeneration. I have seen numberless instances like the case you cite. When men wish to drink whisky every day for a considerable number of years, they should not, at the same time, beget children; for, unless the mother organization has an extraordinary atoning and counter-balancing influence, the children are doomed to some form of neuropathic degeneration, and they will be less capable of enduring what their father did unless their environment should be far more sustaining, as, for instance, the exchanging of the father's city life for a permanent healthy mountain residence or life upon the sea.

I have indicated above the form of heredity. It is not always alcoholism but may be that or any other of the many forms of alcoholic nervous damage. It is not necessary that the parent's indulgence should be carried to the extent of inebriety to endanger the nervous health of offspring.

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AVOIDANCE OF STIMULANTS DURING HEMORRHAGE.

It is customary when the action of hemorrhage occurs for the operator or some bystander to administer wine, brandy, or some other alcoholic stimulant to the patient, under the false idea of sustaining the vital power. It is my solemn duty to protest against this practice on the strictest and purest scientific grounds. The action of alcohol under such circumstances is injurious all round. It excites the patient and renders him or her nervous and restless. It relaxes the arteries and favors the escape of blood through the divided structures. Entering the circulation in a diluted state, it acts after the manner of a salt in destroying the coagulating quality of the blood; and above all other mischiefs, it increases the action of the heart, stimulating it to throw out more blood through the divided vessels. These are all serious mischiefs, but the last named is the worst. In hemorrhage the very keystone of success lies so much in quietness of the circulation that actual failure of the heart up to faintness is an advantage, for it brings the blood at the bleeding point to a standstill, enables it to clot firmly, when it has that tendency, and forms the most effective possible check upon the flow from the vessels. In a case where I had to remove a hard palate that had become carious, in order to reach and twist a bleeding vessel, although the quantity of blood lost during the hemorrhage amounted to over three pounds in the weight, and the syncope was so extreme the patient did not know anything had been done to him after he returned to consciousness, not a drop of stimulant was administered at any stage, and the care to avoid such administration was carefully sustained after recovery in order that the rapid action of the heart might not overcome the resistance of the tenderly sealed-up vessels. I am certain that this rule of avoiding stimulation was far more effective in saving my patient's life than any surgical skill, for the vessel I twisted might have become plugged up nat-

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urally during the syncope, but nothing would have prevented the bleeding from breaking out afresh if the heart, instead of being allowed to swing round of itself, slowly and safely, had been whipped for a brief period into violent action. I refer to this case as typical, because if a stimulant were not wanted in it a stimulant cannot be called for in examples less severe. The course followed was simply to lay the patient quite recumbent when signs of faintness supervened, and so long as he could swallow to feed him with warm milk and water freely. Such, in my opinion, is the proper treatment to be employed in every instance of syncope from loss of blood.

— DR. RICHARDSON in *The Esclepiad.*

WHAT BECOMES OF MORPHIA IN THE HUMAN BODY.

The effect of the work of Alt and Tauber will be to revolutionize our ideas about the fate of morphia, as we shall certainly have to regard the stomach and intestines as the channel by which it is excreted and eliminated, and, as Tauber points out in medico-legal cases, where poisoning by morphia is suspected, the fæces, not the urine, is the material which will have to be analyzed; and in post-mortem cases, the stomach and intestines will be the place to search for morphia, even though it had been administered hypodermically. Alt points out a very interesting fact in his paper which Tauber did not quote, viz.: In dogs which had received a large dose of morphia, the symptoms of morphia poison could be held very much in abeyance by washing out the stomach from time to time through an œsophageal tube. This, as a practical point in opium poisoning, should not be overlooked, and Alt has shown that he has saved the lives of one set of dogs on which he practiced this lavage, while another set which had received relatively the same dose of morphia, but were left to themselves, died. An exceedingly interesting point in connection with this is, that stomach

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lavage was just as effectual where the morphia was given by the rectum as when it was given hypodermically. This furnishes additional food for thought, and it is not improbable that, pushing along this line of inquiry, we may gain valuable information as to the mode of action of morphia on the stomach and intestines.— DR. KEMP, in *Brooklyn Medical Journal.*

HAVERHILL, MASS., March 7th, 1891.

ANTIKAMNIA CHEMICAL CO., St. Louis, Mo.

Gentlemen: — The Antikamnia sent me found a suitable case at once. My patient had long been a sufferer from hemicrania, and the pain was never more than partially relieved by caffeine, acetanilid, etc. Upon the recurring attack, I prescribed Antikamnia, three grains every two hours. The first dose gave instant relief, to the great satisfaction of both myself and patient, and complete recovery was secured. I shall hereafter use Antikamnia in preference to all other preparations for the relief of migraine, sciatica, and other nervous diseases. Very respectfully yours,

CHAS. F. FOYE, M.D.

Mr. Fellows takes this opportunity to thank the profession for their increased recognition of his invention. To the medical gentlemen who have kindly permitted the publication of their testimony in favor of his hypophosphites, and who, by letter or otherwise, have expressed their diapproval of the fraudulent imitations, he is especially grateful. With its increasing favor there has been a corresponding increase of imitations, and though this is a compliment in the sense that "only the best things are worth counterfeiting," yet Mr. Fellows would respectfully request the profession to guard against the misleading advertisements and fictitious compounds of notorious imitators.

SAFEGUARDS AGAINST SUBSTITUTION.

Fellows' Hypophosphites is dispensed in bottles containing 15 ounces by measure — the address, Fellows & Co., St. John, N. B., blown on — the name, J. I. Fellows, St. John,

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N. B., in watermark upon the yellow wrapper; it is hermetically corked, and sealed with crimson capping; is heavy, slightly alkaline, has a pleasantly bitter taste, and deposits a flocculent brown precipitate of hypophosphite of manganese when left undisturbed for forty-eight hours.

Note.— Though this precipitate mars the appearance, its presence has been found imperative to its full remedial effect. — JAMES I. FELLOWS, *Chemist*, 48 Vesey Street, New York.

Horsford's Acid Phosphate as a menstruum is unrivaled. Where quinine or strychnine is to be used, no more valuable combinations could be found.

Schieffelin & Co. make *Phenacetine* and *Sulfonal*, two narcotics that are invaluable for their action in neurotic cases. Send for a circular.

The Victor Safe and Lock Co. make a specialty of physician's safes. The price and quality are beyond all rivalry. Send to the main office at Cincinnati for a circular.

The *Bowden Lithia Water* is destined to be one of the famous waters of the country. It is constantly growing in favor and should be tried in diseases of the stomach and kidneys.

Parke, Davis & Co's new preparation of *Beef Meal, Beef Cocoa* is practically a most excellent remedy and nutrient combined. In dyspepsia, anæmia, and similar disorders, it promises to revolutionize the ordinary remedies.

The Review of Insanity aud Nervous Diseases, a quarterly compendium of current literature of neurology and psychiatry, edited by Dr. McBride of the Milwaukee sanitarium, is a welcome addition to the literature of neurology. The March number contains some excellent translations, and an original paper by Dr. Kernan on Inherited Opium Habit.

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The *Sanitarian* at *Battle Creek* is one of the finest health resorts in America. Its superintendent, Dr. Kellogg, is an eminent physician, and every means and appliance that science has devised are in use here for worn out invalids.

Rheumatism is now thoroughly curable by means of the Turkish bath. Dr. Shepard's sanitarium at Brooklyn, N. Y., makes this fact clear in the increasing number of these cases who are restored after a course of treatment by the baths.

The Monist, a quarterly magazine of *Philosophy*, *Religion*, *Science*, and *Sociology*, has a special value to all thinkers of the higher ranges of thought in science. Published by the Open Court Publishing Co., of Chicago, Ill. Price, $2.00 a year.

"Your preparation, Iodia, is an excellent alterative, and is the most agreeable of any preparation of Iod. Potas., as it does not cause the cramps in stomach which are often intolerable. I have employed Iodia in two cases of Tertiary Syphilis, in which, after five weeks treatment, the manifestations disappeared. In a case of syphilitic eczema it was also successful.— DR. SAM PETITEAU, Garches, France, Nov. 10, 1890.— BATTLE & Co., *Chemist's Corporation*, St. Louis, Mo., U. S. A.

W. R. Warner & Co. are evidently determined to keep in the van of therapeutic remedies. "Antalgic Saline" appeals to us to-day for recognition as a remedy for the relief of "headache," also for influenza and neuralgia; and as an antidote of "la grippe" they issue the "Pil. Chalybeate Compound": Composition carb. protoxide of iron, grains, 2½; Extract nuc. vom., grains, ⅛; Sig.: One pill every four hours and increase to two pills three times a day. Antalgic Saline, one dessertspoonful every four or five hours, till relieved, for headache. The same mode of administration precedes that of the chalybeate pills for "la grippe."

— *Weekly Medical Review.*

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ALCOHOLIC HALLUCINATION.

By Frederick W. Mann, M.D.,

Resident Physician Detroit Sanitarium, Secretary Surgical Section American Medical Association, etc.

The mental disturbances arising from the action of alcohol are noteworthy for their diversity of manifestation. They not only simulate all the phenomena of insanity from simple melancholia or emotional exaltation to fully systematized hallucination, but they comprise all the mental phenomena typical of other toxic agents. The splendid phantasmagoria of opium, the vivid visual and auditory imagery of atropine, the time and space illusions of hashish, the despondent forebodings of henbane, all find their counterparts in the delirium of alcohol.

We do not propose to speak of the simpler forms of sensory or intellectual disturbance attributable to the action of alcohol. Between these and the more complex pathological phenomena, the difference is only one of degree, physiological illusion passing by imperceptible gradations into hallucination. In considering alcoholic hallucination we do not, of necessity, therefore, refer the phenomena to any particular

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site or area. A hallucination is the result of the projection of a mental image outwards, when there is no external agency answering to it. A person is hallucinated when these projections of the imagination no longer correspond with external reality. There is no essential difference between the simpler forms of illusion and complex forms of hallucination, save that sensation, the direct factor of perception, is more and more subordinated and the indirect or representative elements of perception are more and more accentuated. In severe forms of hallucination of the insane, where the amount of sensuous impression is practically evanescent, the imagination and representative elements of cognition are engaged in the association of images having all the significance and force of actual percepts. This is equally so with alcoholics although with these latter, it is even more difficult than with the insane to say how far the elements of sensation enter into the composition of hallucination.

The following are accounted by Griesinger the proximate causes of hallucination: A state of deep mental and bodily exhaustion; local diseases of the organs of sense; morbid emotional states, as fear; the outward calm, between sleeping and waking, and the action of certain poisons, as opium, belladonna, or cannabis indica. In alcoholismus the mental disturbances are manifestly due to either the first or last mentioned of these causes — the state of deep bodily and mental exhaustion the condition of inebriety engenders or the toxic action of the drug on the central nervous system.

Various theories have been advanced in explanation of the origin of hallucination. These for all practical purposes are, however, reducible to four, the peripheral or sensory, the psychical, the psycho-sensory, and that one which, relying largely upon most recent acquisitions in cerebral physiology and pathology, attributes all hallucination to super-excitation of the perceptive centers of the cortex. There is a daily increasing amount of evidence in favor of the cortical origin of hallucination. Accepting this latter theory, we may still preserve the convenient if incomplete distinction established by

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Baillarger and divide hallucinations into psycho-sensory or those having an originating impulse in the peripheral sense organs, and psychical hallucinations, those due to automatic irritation of the central perceptive mechanism. To these, the Salpêtrière School, inspired by the fertilizing researches of Charcot and his associates, have recently added what they term a psycho-motor hallucination, one arising by analogous process to the sensory ones, in the cortical motor centers.

The resemblance of alcoholismus to insanity has been so frequently and forcibly insisted upon, that we do not feel called upon to reiterate the many points by which insanity is imitated. Among the insane auditory hallucinations are most prevalent. The ear, as custodian of the keys of language, presides over a wider empire of experiences than any other sense — the largest proportion of our thought being dependent upon the integrity of our auditory impressions. Most of the writers on alcoholismus have considered the most frequent hallucinations to be those of vision. Modesty precludes opposing our own limited experience to the general testimony of the many distinguished authors who have investigated this subject, otherwise we should be disposed to insist that in this respect also alcoholismus shows no deviation from the phenomena of insanity in that auditory hallucination is a more common feature of that disease than visual hallucination.

The visual hallucinations of alcoholics are exceedingly varied. They may be hideous, grotesque, or awful, or they may be gorgeous, splendid, or inspiring. Unpleasant features usually predominate, and the patient is puzzled and tormented by the presence of rats, mice, beetles, worms, fleas, and other insects. This condition of zoöpsic hallucination is one of the commonest among the phenomena of alcohol poisoning, and may be illustrated by the account given us by a patient whose whole course of hallucination was strikingly typical. This description is written by the patient himself, without any prompting or assistance. He tells us how he arose from his bed to take a dose of a solution of bromide of potash which had been prescribed for him:

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"I began to think about returning to my bed when, looking down at the floor, I saw two tiny white mice playing with each other, rolling and tumbling each other over and over and capering in the most frolicsome manner.

"I was much amused, but did not stir for fear of disturbing their play. After a time I thought I would see if I could make friends with them, so placing my hand down on the floor I chirped to them.

"They seemed to have discovered me for the first time, but were not frightened in the least, and they ran to my hand, up my arm, over my shoulders, down my back, and before I could get them off from me they were in my hair, digging with their sharp little claws into my scalp.

"I sprang to my feet and ran my hands through my hair frantically.

"They ran down to the floor and quickly disappeared. Almost in an instant they were back again, bringing with them a dozen or more companions.

"Some were white, like themselves, others were red, some were striped like a zebra, and on close inspection I found that every color one could imagine was represented.

"Some had long ears like a rabbit, and no tails, others had drooping ears like a hound, and very long tails. A few were gorgeously arrayed with small blankets, bedecked with beads, and spangled with glittering gold stars.

"Some of them walked upright on their hind legs and carried little walking sticks of odd design. Others walked on their front feet and held their tails erect in the air, presenting much the appearance of a toy church steeple. Some stood erect on the tips of their tails and whirled round like a top. After a while they all began a giddy whirling motion.

"While they were in this act, in sprang a band of huge black rats, and began a vigorous warfare with my tiny intruders, causing them to scamper in every direction and vanish from sight. The rats then began a rough play, almost a rough-and-tumble fight. Occasionally one would come close up to me and turn up its red serpent-like eyes and bark

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at me. I heard a slight noise in the direction of the door, and looking up saw two large black cats sitting up in the open transom and carefully adjusting their hind legs. In an instant they sprang with loud growls in the midst of the rats, and hurled them in the air till they all lay on the floor dead or kicking or breathing their last.

"Then each cat seized a rat and sprang out through the transom, quickly returning for another and another till they had cleared the room, much to my relief.

"Then they returned, and after walking about seated themselves in the middle of the floor. Then in sprang a savage looking bull-dog, and giving a fierce bark, which brought me to my feet in terror, he seized one of the cats and shaking it ferociously threw it at my feet. He seized the other and bounded out of the room, followed by the wounded cat he had first encountered.

"I heard them fighting and growling in the hall for a moment, and all was still."

We do not recall having seen any explanation of the reason why animals enter so largely into the composition of the primary illusions of alcohol. These illusions a little interrogation of the patient will usually substantiate as present. A patient, only the other day, declared how he saw a rhinoceros, several huge elephants, and strange-looking reptiles browsing in the yard.

Auditory hallucination, such a frequent concomitant of all delusional insanity, is very perfectly developed among alcoholics. It may assume all forms, from simple auditory illusion to verbal auditory hallucination. The following case extracted from our records will illustrate the imperative character of this form of hallucination:

"Mr. G. W., a lawyer from Canada, was a man of recognized ability and eminence. His practice was principally jury practice, and his imagination was the faculty he most depended on to give a semblance of reason to ambiguous circumstances. As he himself said, in his efforts before the jury, his imagination was his best used faculty. As a result

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of highly differentiated conviviality, Mr. W. began to mix his drinks in novel and insidious combinations; he tried mixtures of beer and champagne, but finally agreed that the union of champagne and whisky best fulfilled the functions of an intoxicant by affording the maximum of stimulation with the minimum of functional inconvenience. His wife, observing symptoms of mental aberration, removed him to this city, where he became thoroughly hallucinated. His primary hallucination was somewhat after the following nature:

"Satan and the Almighty were engaged in that perpetual spiritual feud for which they have become celebrated. The devil, with characteristic inventiveness, had conceived a scheme whereby he was enabled to suspend at will the action of gravity, and after setting fire to the moon intended to precipitate it upon the earth and so annihilate the human race. On the lunar surface there was but one inflammable point, and to reach this one thing was essential — the mystic chair. The mystic chair was on earth and possessed the property of permitting any one standing on it to reach any desired height. The Almighty, speaking to G. W., said: 'Bring me the mystic chair.' Mr. W. was only restrained from searching for the chair by main force."

"Throughout an extended period of Mr. W.'s detention he held frequent conversations with the Deity. He got on intimate terms, and always addressed him as 'My Lord.' His illusions were precise, extending to the accentuation of words and the cadence of sentences. He would hold conversations like this: 'Have I been unjust, my Lord?' 'Did you say unjust, my Lord?' 'Did you say unjust or ungrateful, my Lord?' 'Oh; unjust, my Lord; no, I have never been unjust, but I have been ungrateful.'"

The varieties of auditory hallucination are of course endless, and the experience of every physician will supply many examples.

The least common among the illusions of alcohol are the hallucinations of taste and smell. In this the correspond-

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ence between alcoholism and insanity is again maintained. The rarity of these illusions is to be expected, the sense of smell in the human organism at least being reduced to rudimentary importance. The mental associations clustering round the sense of smell are very strong — stronger than any other impressions received from without — but they are limited in range. What is gained in intensity and immediateness of reflex is therefore lost in the paucity of association whose revivability is possible by olfactory excitation. An odor establishes few relations in thought and feeling, but those few are immediate and homogeneous, no simple sense impression being capable of so vividly renewing the force of a former excitation as an olfactory one. From this lack of memory images it follows that nothing is so evanescent as the memory of an odor. The poet who wandering through the streets of Köln discerned seventy-two distinct stinks and several well-defined smells must have possessed the olfactory apparatus of a lower organism. Any one who has visited that fragrant city will, on analyzing his olfactory reminiscences, find them to be anything but "sweetly varied."

It is dubious if hallucinations of taste and smell should be comprised under Baillarger's classification of psycho-sensorial hallucination. Sensation is apparently not a factor in the formation of such hallucination — the imagination does not wait upon it, but initiates its appearance — and the resulting hallucination is psychical. The hallucinations of taste, for instance, are usually connected with ideas of poisoning, and it is in these the hallucination in the main consists, not in any perversion of sensibility. The hallucinations of smell are also frequently the accidental points of some systematized hallucination. A patient imbued with the dread of hell naturally becomes susceptible to the fumes of sulphur.

The following case records the only occasion we have encountered this form of hallucination with alcoholics. It will be noticed that sulphur was smelt, and the hallucination

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probably originated in the moral defections of the patient, leading him to a foretaste of punishment:

"I. G. was a saloon-keeper, having the characteristic plethora of an habitual soak, who after continued excesses in the enjoyment of Grosse Pointe whisky was attacked by delirium tremens. His primary hallucinations were mainly auditory and visual, but he later exhibited those involving the sense of smell. He spent most of his time groping around the room, plugging every key-hole and cranny with paper, his reason being that a green-eyed and red-skinned demon on the outside of the door was insufflating a fine dust through every available aperture. This dust he said resembled iron-filings. Later the patient exhibited paroxysms of suffocation, which he affirmed due to the sulphurous stench of the dust."

This case seemed a favorable one for making a few tests bearing upon the much-questioned identity of the senses of taste and smell. Here was a disorder affecting the olfactory judgment in its peripheral or central mechanism, and an opportunity was presented of testing the patient's accuracy in the interpretation of gustatory impressions. The patient was blindfolded and the anterior nares plugged with absorbent cotton. Small pieces of meat were given him and he was told to name the different foods. The beef and ham he recognized as such, chicken he called beef, and veal, chicken. Beef tea he could only designate as soup. Port wine he discriminated correctly. Sherry wine he called Catawba, and whisky was promptly recognized as an old familiar friend. Similar experiments on others gave an aggregate result little differing from this one — conclusions were therefore negative.

Before passing from the consideration of sensorial hallucination, a word should be said on the snake hallucination. Disorders of this kind are associated in the popular imagination with excesses in the use of alcohol. "Seeing snakes" is in reality not a common experience. The two or three cases we have seen convince us, however, there is some basis

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for esteeming this one of the occasional retributions of excessive zeal in devotion to Bacchus.

A gentleman, a lawyer from Pennsylvania, a highly-educated and cultured man, recently came under our care for alcoholic mania. He went through thrilling experiences of an auditory and visual kind — attempted to jump out of the window to keep an appointment with the Deity at the City Hall (this being before the days of boodle charges in the city of Detroit), and believed himself sentenced to one hundred years in hell for every moment he was late. This patient wrote an account of his experiences, which assumed the form of a coherent and systematized hallucination. To answer for his offenses he was summoned before the high court of Bacchus, taken a horrible journey down a dark, slimy, murky river, and confronted by a judge, himself a gruesome monster, and a grand jury of reptiles whose evil countenances would by actual contrast have imparted beauty to the smiles of the saurians. Extensive quotation cannot be made from this document, but illustrative of the vivid and insistent character of this form of hallucination, we give in his own words the sentence and penalty imposed by this terrific tribunal:

"The sentence of the court is that you be conveyed by the sheriff to a den of deadly fiery serpents of every degree of size, of strength, of venom; with every cast of tooth and fang; with every varying capacity of sting and bite — there to remain (in open view of a craft of safety moored on the shores of the river, which boat you are at perfect liberty to reach, and cross to the other side, if in your feeble strength you are so presumptuous as to attempt it) until the flesh be stripped from your bones, and your bones disjointed and heaped in unsightly masses. All to await the further orders of the court.

"Mr. Sheriff, you will take the prisoner in charge and see that the sentence of the court is executed.

"He opened a door exposing to view a broad low-roofed, brilliantly-lighted passageway cut in the darkness leading

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down to the dark river. At its moorings where the murky tide met the finlands of the midnight swamp lay a lifeboat manned by a single stalwart oarsman.

"The track to the water's edge was paved with angry hissing serpents. Huge monsters met each other and linked together in ugly arches across the pathway. Great ugly looking heads protruded from the dark walls, and with open fanglike mouth and arched necks cast quick fiery glances at me.

"The boatman beckoned to me and consulting his watch, shouted 'four and twenty hours will the boat yet tarry.'

"The sheriff produced a bottle of brandy, and, measuring out a small quantum, handed it to me saying, 'Drink this and pass to your torture.' I drank it and raising myself up and nerving my arm, I struck him a blow in his hideous face with all my force. He fell to the floor and the bottle dropped from his hand. I seized it and, quickly draining its contents, sprang in among the hissing serpents.

"They leaped at me and entwined themselves around my legs and arms. They environed my body and tore and lacerated my flesh. I tore them from me and flung them into the darkness. Seizing a large heavy one, I pulled off its head, and used its body for a weapon. As I would spring towards them, they would retreat, but others would grasp me from behind. I would turn and stamp and crush those in the rear, only to find them closing in upon me in front. Thus I fought them with every muscle strained to the utmost tension.

"Wounded and bleeding I passed down beyond the half-way mark; two-thirds of the distance had been reached. I was growing faint from loss of blood; my over-taxed muscles were growing weak and feeble. I paused for a moment to breathe when the boatman shouted, 'Courage! courage! you have three hours yet.'

"I renewed my struggle with desperate effort; grinding my assailants under feet, beating them away from my track, tearing them in pieces with my hands, and tossing them high in the darkness.

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"I had almost reached the water's edge. 'Quick! quick!' came from the boatman. I had only one more monster between me and safety. I seized it; it threw its heavy coil around me. I unwound it; and, throwing it to the earth, stamped upon its head. 'Quick! quick!' shouted the boatman. The reptile raised its head again. I caught it in my hands. 'Too late! too late!' said the boatman; and, as I flung the serpent behind me, the boat moved off from the land."

The snake hallucination is difficult to explain. Disturbances in the peripheral organs of vision seem hardly competent to account for such aggravated symptoms, although there are facts suggesting the plausibility of such an explanation. A patient in a room, where the pattern of the wall paper or the carpet abounds in geometrical figures and circles, is apt to find these endowed with gyratory movement, and as a result may come to imagine snakes about him. But the usual causes of this hallucination seem central in origin and due to pre-existing imaginative impulse. Why should this impulse assume the snake form? May not the explanation lie in the facts of nascent consciousness? We know that stimuli cannot be co-ordinated without some ganglion through which they are brought into relation. In effecting this co-ordination, the ganglion must necessarily be subject to the influences of each stimulus and must undergo a succession of changes. This action and its reaction implying perpetual experiences of resemblances and differences constitutes, according to psychologists, the raw material of consciousness. Therefore, as a corollary of this process, Herbert Spencer asserts that as "consciousness is developed, some kind of instinct becomes nascent." That there is a nascent instinctive dread of the serpent in man and monkey is obvious. There is every reason for it. The early history of our race abounds with record and tradition of that internecine strife between man and the serpent. We find the serpent permeating all his mythology, a chief feature of his legends, inscribed on his monuments, engraved on his symbols, and worshiped as his God.

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Even before this period the dread of the serpent may have been implanted in our human neuroplasm. Dr. A. E. Brown recently made some experiments in the Philadelphia Zoölogical Gardens, and found that monkeys, who, born and reared within the gardens, had never seen a reptile, yet exhibited great fear and curiosity when a snake was placed in their cage. An alligator or turtle caused no surprise whatever. Other animals, like the ox and the hog, were either perfectly indifferent or manifested no fear of the snake. These experiments, which were repeated in many ways, could lead him to but one conclusion — "that the fear of the serpent became an instinct in some far distant progenitor of man by reason of his long exposure to death in a horrible form from the bite, and that it has been handed down through diverging line of descent which find their expression to-day in Homo and Pithecus." What we know of the facts of hereditary transmission encourage the belief that under exceptional circumstances latent ancestral experiences can be revivified. As an example, we may mention the fact of the speech function in certain pathological conditions reverting to the primary stages of language, the patient designating objects by simple onomatopœia. From those far distant days when our common arborean ancestor climbed the tree to escape the serpent's fang, and yet found no safety from pursuit, or from those later days when primitive man erected his dwellings in the midst of lakes that he might, among other things, avoid the gliding treachery of the serpent, — from those days naught divides us but the long lapse of unnumbered years and the acquisition and possession of a sublime reason. What, therefore, more likely, that when that reason lies prostrate and exhausted at the feet of sensual excess, that man's consciousness deprived of higher inhibitions should revert once more to that epoch when the common progenitor of Homo and Pithecus lived in perpetual awe, and labored in continual warfare with our old enemy — the serpent.

The innumerable forms under which the hallucinations termed psychical are manifested with alcoholics preclude

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their description here, in anything but general terms. In these cases the imagination seems to ransack the remote recesses of experience for the materials of its fabrications. Every imaginable delirious combination is possible. According to Magnan, the hallucinations of topers are "especially characterized by their mobility and their horrid nature." In the more chronic forms of alcoholismus we rarely find the hilarious illusions which accompany many forms of acute mania. The patient is pursued and followed. His acts of violence are attempts to free himself from tormentors. He is cognizant of conspiracies to murder him in sleep. He learns of plots against himself and family, and busies himself in the construction of counterplots. He is a participant in all kinds of catastrophes. Foremost among these hallucinations are those in which the Deity, particularly in his character of a judge or avenger, dominates the imagination of the patient. The devil also intrudes upon his reveries, and intimates the proximity of that Inferno to which the devotee of Bacchus feels himself already condemned.

The following record of a recent case may be given to illustrate these forms of mental derangement:

"J. K. was a well-known, a justly-renowned inebriate of this city. His visits were always diverting in consequence of the amplitude and variety of his hallucinatory experiences. He usually exhibited three distinct stages of hallucination. First, one of maudlin sentimentality, during which his countenance would crystalize into a perpetual grin, and to those around him he would adopt the languishing manner of an enamored lover. During the second stage he would be morose and gloomy, and his hallucinations would be of a terrible character. His wife and children would be killed before his eyes in a railroad disaster, or would meet some equally untoward fate by inundation, explosion, fire, or other calamity. In the third stage he would be extremely violent, and have to be forcibly controlled. Up to this period Mr. K's hallucinations seemed purely psychical; they usually concerned others more than himself, were circumstantial,

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persistent, and hypnagogic. His violence was usually the outcome of imagined personal persecution, although on the last occasion he was treated he was forcibly restrained from throwing himself out of a window, to which act he was impelled by the persistent determination of five young ladies to disrobe in his bedroom."

The Salpêtrière School have recently described a form of hallucination they term "psycho-motor hallucination." If we accept the theory that hallucinations are due to centrally initiated irritation of the cortical sensory centers, there seems to be no reason why an analogous process may not take place in the motor regions of the cortex, and the resulting hallucination will be a motor projection. The psycho-motor hallucination has as yet only been described in its connection with the speech function. The *idea* is, as we know, a result of the association of memory images stored in certain common centers of perception, as the auditory, the visual, and so forth. The *word*, which is the symbol of the idea, is composed of auditory and visual images, and also images of the expressive acts, the articulo-motor and grapho-motor images. Either of these four images is of itself incapable of reviving the idea of an object, unless a higher cerebral act associates it with the different sensory images of that object. But imagine the motor centers independently energized, say those presiding over the articulo-motor mechanism; the patient then articulates without initiation by the active ideational centers, and as a result where this speech motion is thus projected in consequence of related associations synchronously vivified, the patient perceives his own voice, as we do in dreams, and, attributing the speech to external voices, becomes hallucinated. It will be observed this is an entirely different phenomenon to auditory hallucination and the hearing of external voices, for the impulse may not be projected as an articulation, but simply as an articulatory motion; so also, is it different from that form of disorder called echolalia, in which the insane hear their thought plainly formulated in their own ear,—this process only involving the sensory speech centers.

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We have never heard of this form of hallucination being described except as a phenomenon of insanity, and had it not been for the interesting examples lately recorded by M. Seglas, of the Salpêtriére, and the differential points his luminous ideas have so clearly established, the following case would have been passed by as one of verbal auditory hallucination:

"Dr. T. was a physician practicing in the northern part of this State. When a boy he had fallen and fractured his skull, and was subject to paroxysmal headaches. He was a man of refined tastes and quiet studious habits. He contracted the habit of whisky-drinking to allay the cephalalgia. It was periodic, and between times his habits were so exceptional as to divert all suspicion from alcoholic propensities. When he came for treatment, Dr. T. was suffering from all kinds of visual hallucinations. Men, women, children, satyrs, harpies, devils, imps, and all the heroes of mythological notoriety paraded around his bed, making minatory grimaces. On the second day he began to hear voices within him. An emissary of Satan took up his residence 'just below the liver,' and conversed with him. A blister was applied over the site indicated, but the devil was not of the kind that comes out by counter irritation. Sometimes the internal voice would speak by his mouth and response would be made in a different tone of voice. The patient was perpetually speaking to himself, but close examination and the frequent repetition of the above noted phenomena, revealed that, as compared with echolalia, the sequence of phenomena was reversed so that this case was actually one of psycho-motor hallucination."

Inco-ordinated psycho-motor activity offers an explanation of many conditions hitherto interpreted on the basis of sensory disturbance. Duplication of personality, a not uncommon form of hallucination, is more intelligible as a dichotomy between the intelligence and the motor phenomena of speech than as a derangement of relations in sensory sequences. The delirium known as "low-muttering" oc-

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curring, as it does, in typhoid conditions — in conditions where excessive and active mental action is unexpected, might be due to toxic irritation of the motor centers.

In one important feature hallucination, and especially alcoholic hallucination, bears a striking resemblance to certain phenomena of hypnotism. M. Ballet, in a recent number of *Le Progrès Medical*, described a patient in whom the power of revivifying representative images was pathologically increased. The vaguest sight or sound suggestion sufficed to awaken definite images. The patient was in a condition of conscious hallucination. M. Ballet regards ethylism as an important etiological factor in his case. In cases of alcoholic hallucination the patient will readily "represent" on the suggestion of another. These cases seem to lie somewhere between dementia, where the power to represent is obviously diminished, and hypnotic conditions, where the representative consciousness is actualized at the suggestion of another.

The principles for the treatment of alcoholic hallucination resolve themselves into those regulating the general management of inebriety. In some forms of visual hallucination the patient seems calmer if blindfolded or placed in a dark room, but in hallucinations so persistent as to be hypnagogic these measures are of little use. To immerse the feet frequently in hot water sometimes seems to have a subduing influence in acute maniacal conditions, — but how little derivative action can do for these troubles was demonstrated by the case of a patient who came under our care for delirium tremens, and who, before we removed his property, managed to secrete a small penknife under the mattress of the bed. With this he subsequently cut the facial artery and bled himself, *ad deliquum animi*. Nevertheless, his hallucinations persisted. That delirium tremens is in any way dependent upon cerebral congestion seems highly improbable. Strychnine is undoubtedly useful in stimulating general inhibitory function. Hyoscyamus and its derivatives we regard the most valuable hypnotic, especially in conditions approaching acute mania.

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THE TREATMENT OF INEBRIETY.*

By N. Roe Bradner, M.D., Philadelphia, Pa.

It has been said that "nothing succeeds like success," and it is especially well for those who are engaged in the service of our cause that it is so. Otherwise deviation from the routine of to-day, every invention, or advance in science or the arts, would be frowned upon, and the best efforts of our most enlightened, enterprising scholars retarded, and too often made impossible of success. The title of this essay, the very name of the association under whose auspices we are to-night assembled in the honored halls of the New York Academy of Medicine, has not escaped the sneers of men, prominent even in the medical profession. An English author on mental aberration has seen fit to employ characters of the Italian alphabet to designate, in derision, this association, and its object of curing inebriety. Now, the first † American to write upon diseases of the mind, said "experience has exhausted herself in abortive efforts to form a system of principles that shall lead to general success in the treatment of diseases of the mind," and "these diseases can be brought under the dominion of medicine only by just theories of their seats and proximate causes." At that very time, *i. e.*, nearly a hundred years ago, we read of madness of a furious kind occurring in Java, brought on by the intemperate use of opium, and that the poor, when afflicted with it, were put to death, but the rich, who were able to purchase the service of female nurses, generally recovered.

What volumes would have been written, and at our command to-day, if this subject of inebriety and its treatment had been grasped and handled then, as it has been by

* Read at April Meeting of Association for the Study and Cure of Inebriety.
† Dr. Benjamin Rush.

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this association for the past two decades. Had our membership consisted of timorous men, or those who will only make an honest journey over a smooth road, neither inebriety nor insanity would even yet be regarded otherwise than an unavoidable curse, or a self-inflicted unfitness for society. For it is certainly true, that some of the greatest masters of the subject of insanity are, or have been, members of this association; besides which, the two diseases are so nearly allied, both in etiology and necessary treatment, that scarcely any discovery can be made to elucidate, or alleviate the one, that does not have a corresponding salutary influence over the other. Insanity was the first to be recognized as a disease, and, in the natural course of events, more advance has been made in its treatment; but, although it does not even yet seem to be generally accepted, it is, beyond all doubt, true, that what has been done for the insane must be done for the inebriate. Are we told but little has yet been done towards our promised treatment of inebriety? As compared with what has been done for insanity, we answer: Count the physicians who are wearing our harness — who labor, or even believe in, the utility of our undertaking! Then count and compare with them the number of physicians who are employed in the treatment of insanity, to say nothing of the large number of grand, well-equipped hospitals, built and supported at public expense, for the exclusive care and treatment of the insane! Is it to be marveled at, that more is known of insanity and its treatment, and can reasoning creatures doubt, that with the same facilities, and an equivalent corps of professional workers, the successful treatment of inebriety would be as well demonstrated and universally acknowledged? I therefore think that the first successful step in the treatment of inebriety is to secure physicians, who, through experience as well as study, are familiar with the disease. How we are to provide such physicians will be considered further on. Next, having first recognized inebriety as a disease, we must seek to bring it under the dominion of medicine by just theories of its seat and proximate cause.

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Within the past few months every physician in the city of Philadelphia, beside many elsewhere, have received from a committee appointed for the purpose, an invitation to subscribe for a fitting monument to be erected to the memory of the late Dr. Benjamin Rush of that city, as the pioneer great physician of the great new world, the United States. Who is there to depreciate the greatness of that great man? None! And yet, how few of his cotemporaries *then* believed in his humane advanced idea of insanity? Until that time insanity had not uniformly been regarded as a disease, but rather the manifestation of an evil spirit; and, the remedy that had chiefly been applied was the whip, and similar means of punishment. Even Dr. Rush, in his early and excellent "inquiries and observations on the diseases of the mind," had not yet learned that such treatment was wholly unnecessary.

In one of the great daily papers published in Philadelphia, I recently read the following editorial: "A movement is on foot in this city looking to the establishment of an institution to be known as the Rush Hospital, and to be devoted to the study, cure, and treatment of consumption, and its allied diseases. It is proposed to secure a building in the city for temporary use, and then, when a sufficient endowment shall have been obtained, to erect the permanent institution a short distance from the city and supply it with every equipment that will aid research and investigation, and give the patients systematic and intelligent care." Now do you ask why I invite your attention to a subject that seems to cause digression from that which we are considering? It is because the scheme coincides exactly with what I have long been and am still earnestly hoping to see undertaken for the cause of inebriety. If, in the above newspaper article, we substitute the single word inebriety in place of consumption, it would cause to be advocated one of the most needed institutions we now suffer the want of, and one that I cannot doubt will sooner or later be established in each large city. Just think of the progress in the study of inebriety that

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would follow the establishment of such an institution in the midst of a populous city, where every street, and sometimes every house in a street, contains an inebriate without treatment or care, indeed, almost without God, and without hope in the world. If such a hospital should be established in the vicinity of medical colleges, and the college provided with a teacher learned and experienced in the subject of inebriety, who would give his pupils the clinical instruction regarding the disease that could be so well acquired in such an institution, our previous question of when and how we are to secure certain physicians would be already answered. There is now no proper provision for the treatment, care, or even restraint of inebriates in our proud city of Philadelphia, and if any city of our whole nation is properly and adequately equipped in this respect I do not know it. It is a very common thing for our society to be startled by the overt act of some inebriate, very likely a member of some well-to-do, respectable, refined family. They are no more fit nor safe to be at large than those with acute mania, and must be restrained, but how? Our only present provision is to treat them as insane and take them to a lunatic asylum, or as criminals, and commit them to prison. These courses are both unjust and equally unavailing. The State laws very properly prohibit the detention of a sane person in a lunatic asylum, and although the necessary certificate of insanity can generally be secured at the critical time, it will not serve to hold the patient beyond a few days, *i. e.*, until the severity of the paroxysm is over. Indeed, it is highly improper, and very unjust, both to the inebriate himself and the insane patient, that they should be amalgamated, as it were, with each other. The next, and only alternative, is to treat the disease as a crime and send the patient to prison. I will not offend the ears of this association by even discussing the propriety of this measure, which is cruel, barbarous, and a disgrace to modern republican government.

Let us have hospitals for our inebriate! Let us teach our medical students the importance and the means of battling

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with that disease, then in a few years we will have a faculty of physicians prepared to do for inebriety what has been done for insanity. In the consideration of this subject I have been impressed with the relative aspect of professional treatment of these two diseases, presenting, as it seems to me, a condition of affairs not only important *per se*, but strongly argumentative of the correctness of the views herein advanced. To-day our nation needs public hospitals for the treatment of inebriety, institutions supported by the commonwealth, so as to provide for the great number of poor inebriates, or those who are unable to provide private treatment. The larger portion of this unhappy class cannot be saved any other way, and for us to *permit* their destruction is not much improvement on the system of the Japanese who killed them outright. On the other hand, our country, abounding in great public asylums for the insane, and which are restoring many to reason, *now* needs greater efforts and more promising facilities for the *cure* of insanity, such as might be secured either in private hospitals, or even in the private practice of physicians especially educated and prepared for that purpose. In other words, the growth of the study of inebriety has now about reached that of insanity, as it was a century ago, while insanity in its great march now demands still greater and more provision than we can yet even ask for inebriety. In conclusion, I beg to repeat a suggestion made on a previous occasion, and in which I have great confidence. It is that greater pains be taken to secure both physicians and nurses for both the insane and the inebriate. In brief, I suggest the employment of nurses and attendants in hospitals and asylums from medical students who have to earn their way into the profession, and of whom there is an adequate number.

The employment of such persons would have the double advantage of securing the services of educated, proper persons as attendants, and also prepare the future physician with practical information and experience, fitting his future calling.

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ALCOHOLIC TRANCE.

By C. Spencer Kinney, M.D.,* Middletown, N. Y.

By the term Alcoholic Trance we shall refer to a condition induced by the use of alcoholic liquors in those of neurotic diathesis, that results in a lapse of memory regarding time, place, and circumstances; lasting from a few hours to a week or more, in which the individual may act naturally to all his friends, yet awake from that condition with absolutely no memory whatever of his previous conduct.

There is but little recorded in medical literature relating to the subject of this paper. Not but the condition of alcoholic trance exists commonly enough, but owing to its peculiar character is often ignored by physicians and courts, and considered a lame excuse rather than an honest statement of the unfortunate victim. A dean of a well-known medical college, after hearing a gentleman give his history, suddenly broke in with, "What is the use of your lying to me." The gentleman stopped in his recital and changed physicians, with diminished faith in the erudition of the doubter to whom he had honestly recited his case hoping for help.

Without a knowledge of the possibilities of the condition, doubt can easily exist. With a knowledge of the condition, mistakes may be avoided.

But a few days ago, a young man of intemperate habits was hanged in Columbus, Ohio, for killing an old lady whom he had loved for the many acts of kindness she had shown him. He was arrested and tried, and so overwhelming was the evidence of his guilt that he was sentenced. He, however, stoutly adhered to his statement that he knew nothing whatever of the act, but said if he was guilty he should be

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punished for the crime. It is more than likely that this was a case of alcoholic trance, yet the fact of its being such was not brought up during the trial of his case.

It is probable that any sympathetic disturbance of the cerebral function will modify the power of memory to a marked degree under proper conditions. These we have seen occur from any sudden emotion, physical or mental fatigue, traumatism, epilepsy, aphasia, states of anaemia, and the mental changes incident to old age. Also, we have noticed that there may be strong tendencies to lapse of memory regularly occurring under certain conditions. The following two cases will illustrate the possibilities in this form of trance:

CASE I.—"Pursuant to your request, although somewhat averse, I will relate my experience with alcoholic liquors.

"My first drunk occurred while I was attending an academy. I drank with other students until they were all drunk. I, myself, had felt no effects from the liquor until after they had all left the room, perhaps an hour later. I dropped as if I had been shot: I knew nothing until thirty-six hours later. During this time, I am told that I went to my boarding place, took my meals, and acted much the same as at other times, with the exception that I would not attend school. But that thirty-six hours is, and always has been a complete blank.

"After this I did not drink any liquor until I was twenty-five years old, at the time being in the business of a commercial traveler. At this time I commenced suddenly to drink. I drank to forget, and drank continuously for a period of two years; averaging, I should say, from a pint to a quart per day of whisky. At the first I did not become easily intoxicated, but towards the last much more frequently. However, I could never discern that I was becoming intoxicated and I always attended to business same as I had previously done when I did not drink. I could never discover any mental effect of the liquor until suddenly I would pass into a state which would sometimes last one, two, or several days,

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at the end of which time I would suddenly come to my senses and find myself differently situated than when I last remembered. During these times I would still attend to business, and, as I am told, no one could discover that I was intoxicated.

"At one time I was standing at the bar, drinking what we call 'Stone-walls,' with two of my customers. I had been drinking the same as usual right along. I remember raising the glass to my lips; I have no recollection or knowledge of events that occurred for the following week, when one morning I woke in a town one hundred and seventy-five miles distant from the place where I had taken that drink. Of course, having had previous experiences of like character, I knew what had transpired. I stepped up to the landlord and asked him how long I had been there. He said: 'Two days.' During those two days, he told me, I had visited neighboring towns with a team, in his company, in a radius of twenty miles, and had transacted my usual business. I referred to my sales-books, and found that I had visited all my customers along that line of one hundred and seventy-five miles; that I had sold them goods. My order-book stubs showed that I had sent the orders to the house. But being fearful that all was not right, I wrote the house for the daily reports which I had sent. Upon receipt of these I found they were all in correct form. I wrote letters to the customers whom I sold goods; in every instance the business transacted proved to be correct. I wrote to the hotels where I had been accustomed to stop; in every instance but one, I had paid my bill, and all was satisfactory. None of these people, I found on my next trip, were able to note anything unusual in my actions or business methods; yet the fact remains, that during an entire week, from the time of taking that drink until I woke, as it were, from a dream, one hundred and seventy-five miles distant, I had been utterly unconscious of all that transpired. It is to me to this day, and always has been, a complete blank. I only know of what occurred, from my books, and the reports of those whom I met.

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"Another time, during one of these attacks, I visited a clothier, whom I well knew, in a certain city, and ordered a suit of clothes. Of course, coming to myself at a later time I knew nothing of having ordered any clothes. But on my next visit to this city, I was greeted by the clothier, on the street, in not very flattering terms. He wished to know when I wanted that suit of clothes, greatly to my astonishment. I said: 'What suit of clothes?' He became angry, and said that I had ordered a suit at such and such a time. I told him I had no recollection of ordering any clothes; I did not believe that I had done so; if I had, I must have been drunk. He said that I ordered the clothes, and that I was not drunk, unless I was drunk then. I went to his store with him. He showed me the order in his book. From certain peculiarities in the cut and make of the clothes, as well as from the style of the goods selected, I was satisfied I had given the order. Of course, I took the clothes, something to my embarrassment. They had been ordered during one of these periods.

"I might name a great many other incidents that have transpired; this will suffice. But I have never been able to learn of my having done anything during these times different than I would have done at any other time. Yet it is a queer experience, and many people are loath to believe the statements I make in relation to it; nevertheless they are true."

Case 2. — H.'s father had been insane, recovered, and had been active in his professional life. H., though nervous, had been a hard student in college, had graduated with credit in law, with no particular fear of following his father's example in becoming insane. A few years ago while in Chicago, H. took to drinking, and his friends suddenly lost sight of him. His description was given in the "Associated" Press, but he could not be found. For ten days his friends were worried, when a letter reached them from him, dated at New Orleans, saying he was there and without money. On his return home he gave the following account of his experience:

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From the time he was drinking in Chicago he had no recollection of any intervening event until he found himself in a strange city with no familiar object by which he could tell his whereabouts. In mechanically searching his pockets, he found a key with a tag bearing the name of an unknown hotel. Taking that for a clue, he found his way to the hotel, and there again everything was strange to him, although he had registered there a week previously, and those connected with the house had noted nothing strange about his manner, saying that he had conducted himself like any gentleman of leisure, and had not drank to attract attention.

Concluding that he was in no condition to care for himself, he started North, as soon as he received money, and placed himself in an asylum. He gained steadily in physical strength upon a generous diet of milk and appropriate medicine, and resumed work with a determination to let liquor alone; the possibility of another trance opening up too great a field for him to risk himself again.

Prognosis: the patient should be cautioned that the trance state may return if he resumes drinking. To avoid it is to let liquor alone.

Treatment: This consists in giving the patient hot milk, beef-tea and bovinine, and such remedies as the general condition of the patient seems to require.

THE *Pacific Medical Journal* quotes from a Norwegian health journal to the effect that alcoholic drinking has declined in Christiania, and ether drinking rapidly increased. Potato and barley brandy have fallen in demand, and the importation of ether from London doubled. The use of ether seems to be more fascinating to the Norwegian drinkers, and all classes are trying it, and evidently it will be a famous drink if not checked in the near future. It has been used for some years, but only recently has it come into any prominence. The supposition that this form of drink was confined to Ireland is a mistake.

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ETIOLOGY OF ALCOHOLIC INEBRIETY.*

By L. D. Mason, M.D.,

Consulting Physician Inebriates' Home, Fort Hamilton, L. I.

The causes of alcoholic inebriety may be divided into *predisposing* and *exciting*, and the latter into two forms, *direct* and *indirect*. Inebriety from either of these latter subdivisions may be comprehended under one term, "acquired" inebriety — in contradistinction to those forms of inebriety directly traceable to heredity. This term "acquired" we shall apply to the form of inebriety due to "accidental" causes.

In the majority of cases inebriety is not voluntarily acquired in the same sense that a person deliberately and as a matter of choice "makes himself an inebriate," so to speak; we use the term acquired, therefore, as we would apply it to other diseased conditions, not necessarily by it use implying a "moral delinquency." The *predisposing* cause of inebriety is latent and has to be called out by some exciting cause, either direct or indirect, usually of a *slighter* nature than would develop an "acquired inebriety."

Heredity is the great underlying or *predisposing cause* of alcoholic inebriety, in the same sense that heredity is the predisposing cause to many diseased conditions — as insanity, phthisis, gout, etc., constituting a diathesis or tendency to special diseases. We can with perfect propriety use the term "inebriate diathesis." We can trace "the pedigree of disease," as Jonathan Hutchinson calls it, in inebriety as in other forms of disease. Dr. Elam affirms that the offspring of the drunkard will inherit either the original vice or some of its countless protean forms. Plutarch, in his essay on

* Read before the American Association for the Study and Cure of Inebriety, April 11, 1891.

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"Delays of Divine Justice," asserts this fact; likewise Aristotle and Plato.

Dr. Kerr regards *maternal inebriety* as the chief hereditary cause of inebriety. Statistics show that female inebriates are much more common in Great Britain than with us—in Wales convicted inebriate females to convicted inebriate males stood as three to one, while in the upper classes of English society it is well known that inebriety among females is greater than in America. My own observations trace the hereditary cause in the majority of our cases to an inebriate father.

Heredité croisé, or cross heredity, has been noticed in inherited inebriety—that is, inebriate mothers gave rise to inebriate sons; inebriate fathers to inebriate daughters. Giron states that the hunters have a proverb, "*chienne et chien—chienne et chien*"—the mother's qualities in the son, the father's in the daughter. Buffon recognizes that fact, also; personally I have not any observations to give on this point.

Atavism has been observed; that is, where the inebriate tendency or diathesis escaped the second generation and appeared in the third—the grandparents being the transgressors. We notice this fact in other diseases, as consumption, etc.

This is the sequence that is established should an inebriate mother conceive:

1. The fœtus may die *in utero*. Miscarriage is a common condition in chronic alcoholism in pregnant women.

2. Should the fœtus survive, pass to full term, and a living child be delivered, it may be an idiot or congenital imbecile.

3. Escaping from these conditions, and manifesting a fair amount of intelligence, the child, at or about puberty or earlier, may develop one of the various neuroses—chorea, paralysis, epilepsy, etc.

4. Passing from youth to manhood without any of these manifestations, then suddenly, oftentimes from slight ex-

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citing causes, inebriety, or insanity, stand out in bold relief, and the hand of fate — shall we call it? — draws the curtain on a life that has struggled from birth with an "inebriate diathesis."

Surely no class of persons in this wide world have a more marked claim on our aid and sympathy than these "*miserables.*" Impotent to help themselves; lacking entirely that necessary self-restraint and control that belong to a healthy, normal constitution. The so-called moderate drinker — we define such a one as a person who drinks habitually every day, so as to keep himself moderately stimulated, and his blood and fluids moderately alcoholized, but is never drunk, never loses his self-control, and is eminently respectable in the general sense of that term. Such a man we assert may be the originator of a long line of inebriates, insane or neurotic individuals. It is a common impression that the bloated drunkard and the debauchee alone gave being to such a progeny; yet so potent, so far-reaching are the effects of alcohol if continuously used with so-called moderation, that who shall say in what quantity it may be used safely, habitually, so as not to affect cell growth in our own organism, and dwarf and degenerate it tenfold in the being whom we may beget, the modified cell in our own organism being much more modified in our progeny.

Dr. Baer, of Berlin, says: "The extremely delicately-organized, very sensitive and easily-destroyed construction of the nerve and ganglion cells presupposes for the normal physiological function of this structure the completest integrity of this apparatus, not only anatomically, but also physio-chemically. *Every, even the smallest, inroad* on the nutritive and formative processes produces here a reaction of incomparably graver significance and weightier results than on any bodily tissue."

Dr. Baer refers to the brain particularly, for upon the brain and nervous system alcohol produces its most marked (probably functional) changes, and slight changes in cerebral or nerve tissue mean a great deal more than similar changes

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in other tissues or organs. We do not feel that we are making an extravagant statement when we say that these slight cerebral and nerve changes may occur in the progeny of so-called moderate habitual users of alcoholic liquors. If so, here is the "initial lesion," the starting point of the long line of inebriates and insane with which this world is cursed.

"Total abstinence" is the safest remedy for this evil, and until it is universally practiced the production of idiots, imbeciles, insane, and neurotic individuals will not cease. But, it may be asserted that the so-called moderate habitual user of alcoholic liquors will not be answerable for "this train of consequences" if he does not exceed his "physiological quantity." Will any one state what is that safe or "physiological quantity"? We shall certainly lay this waif of hereditary inebriety, insanity, and kindred evils at the door of the so-called moderate habitual user of alcoholic liquors.

But, it may be added, there are cerebral changes produced by causes other than alcoholic. Very well, eliminate from the etiology of cerebral disease one of the most potent of these causes — the habitual use of alcohol in any quantity. Not only inebriety or insanity in ancestry, but all hereditary diseases that tend to weaken the nervous system or give rise to a so-called "*congenital neurasthenia*" are the fertile soil from which inebriety may spring. How many persons born with "a tendency to diseased cravings and paralyzed control," as Dr. Clouston aptly styles it, cannot resist the ordinary shocks of life, readily yield to the seductive influence of some narcotic, alcohol, opium, chloral, cocaine, and become veritable narco-maniacs! What a birthright!

The question naturally arises, must all born with such a diathesis succumb eventually to inebriety or insanity in some form? We are not prepared fully to answer this question. There are in every community those who are aware of their being possessors of this unfortunate tendency. There are also those who inherit a consumptive diathesis. Instances are on record in which those having a consumptive diathesis have, by selecting their environments, as to climate, occu-

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pation and habits of life, successfully warded off the inroads of special disease. May it not be that a person who inherits the inebriate diathesis may also escape the usual results of the same in his own person by observing certain rules, regulations, and habits of life? Children born of parents who have not yet become inebriates escape, while children born after parents have become inebriates inherit the inebriate tendency. Children who inherit the mental or physical traits of either inebriate parent are apt to inherit the inebriate tendency, while other children in the same family escape it.

Moral causes are written down as the chief prevalent causes of insanity proper, second only, in productiveness, to alcoholism. How often, as we have stated, do these congenital neurasthenics, these unfortunates born with a diathesis either inebriate or insane, yield to grief, strong mental emotions, loss of friends or estate, and become either inebriates or insane, when such causes would have produced neither result in a healthy, nervous organization. There are other causes, to which we think the term *accidental* might also be properly applied, and where we generally use the term "acquired inebriety," with which predisposing causes have nothing to do, and where we might with propriety say: "Neither did this man sin nor his parents." Whether inherited or acquired, inebriety is produced by certain exciting causes which may act directly or indirectly upon the nervous system.

Direct causes are those that operate directly upon the cerebro-spinal axis, more especially the cerebrum, viz., sunstroke, head injuries, including concussion and fractures of the skull, cerebral syphilis, and brain tumors.

Moral causes producing more or less mental shock act through the different nerves on the great nerve centers, leaving behind them a profound cerebral disturbance that has as its outward manifestation insanity, or inebriety, or some other form of narcomania. Other causes act indirectly by *peripheral irritation* through the afferent nerves on the central nervous system. Such are painful ulcers, dys-

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menorrhœa, urethral stricture, chronic neuralgias, chronic painful diseases of any nature; tænia solium has been known to cause inebriety, when relieved of the cause the patient recovered.

Any cachexia that debilitates the nervous system, or that may result in neurotic changes, must be classed among the causes of "acquired inebriety". Chronic malarial poisoning, syphilis, etc., are among these.

Neurasthenia, or nerve exhaustion from under-feeding and over-work, especially if combined with mental anxiety, is a fertile source of inebriety or insanity. *Moral causes* produce this condition usually before plunging the patient into one or the other of these conditions. Certain employments, by their unsanitary surroundings, may produce the tendencies that lead to inebriety. The explanation for the reason that any condition producing unrest, insomnia, pain, mental worry, or mental and physical exhaustion, causing the subject of these conditions to turn to alcohol for relief from exhaustion, insomnia, or pain is found in the fact that *alcohol* is a *stimulant*, a *hypnotic*, an *anæsthetic*, a triple capacity; hence the neurasthenic from any causes flies to it for relief; the victim of dyspepsia and mal-assimilation, for faintness and sinking sensations, etc.

The one who cannot sleep finds, especially if the cause of insomnia is mental worry, that *alcohol* is to him a true hypnotic. As an *anæsthetic*, alcohol is very pronounced, and in degree will relieve pain as much as opium, chloroform, or ether. The older surgeons recognize this fact, and before the days of modern anæthesia alcohol was used for this purpose. The laity have found out long since this peculiar quality of alcohol, and many victims of pain have sought relief in its anæsthetic effects.

The great lesson that all those who attempt to cure the inebriate is that his inebriety has a *cause*, that the inebriety itself is only a symptom of a nascent condition — as some one has said "neuralgia is the cry of a diseased nerve," so inebriety is the cry of a diseased nervous system, produced

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by causes acting directly or indirectly upon it. "*Tolle causam*," the motto of every practitioner in dealing with all forms of disease, should also be the motto of every specialist on inebriety. A careful analysis of the cases of inebriety presented to us would show that there are many cases directly traceable to causes or diseased conditions that can be removed, and upon which the inebriety depends. It is the duty of every specialist on inebriety, every physician who would deal successfully with such cases, to trace out and eradicate the cause of the disorder. We cannot remove the cause in all cases; we cannot eradicate hereditary tendencies or certain lesions of tissue resulting from disease or injury; but, in many instances, we can relieve the patient of a painful or exhausting disease and thus cure his inebriety or other form of narcomania.

It is daily becoming more impossible to ignore or be indifferent to the medical questions concerning inebriety. Disease, injury, and crime, the direct result of inebriety, are not satisfactorily explained from any moral standpoint. The public turn to medical men, and they are unable to explain, except in some vague half-vice and half-disease theory.

At the meeting of the American Medical Association at Washington in May, four papers on inebriety were read by Drs. Quimby, Searey, Morris, and Chenery. Also four papers on morphinism by Drs. Lett, Mattison, Watson, and Burkhart.

An English paper reports the records of murders of women by inebriated husbands, since January 1, 1889, to January 1, 1891, to be three thousand and four. These statistics were taken from the press of the United Kingdom.

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SOME NOTES ON INEBRIETY.*

By W. S. Watson, M.D., Matteawan, N. Y.

The effects upon the human body as a consequence of the long-continued or excessive use of alcohol has been proved by experience of various observers. Since we are a society for the study and cure of inebriety, it is but fitting that some general observations should be offered: Are we justified in expecting that the habitual use of alcoholic liquors, sufficiently prolonged, will ultimately be attended in a large proportion of cases with serious consequences to the nervous system, and morbid conditions engendered? That certain morbid conditions or lesions are actually and almost uniformly found in persons advanced in life who have used alcoholic liquors even in moderate allowances, there is little room for doubt.

Dr. W. B. Carpenter, of the University of London, finds many conditions that are undisputably primarily caused by the action of alcoholic liquors. Not only are there to be found physical lesions, but the mental ones are marked. "Alcoholism is a term applied to pathological processes, and attendant symptoms caused by the excessive ingestion of alcoholic liquors, and are very different if a large quantity is consumed at once or at short intervals, or if small quantities are taken habitually; hence there are subdivisions called acute and chronic alcoholism. In the acute form belong the catarrhal condition of the alimentary mucous membrane, rapid coma, delirium tremens, and acute insanity. In the chronic class are prolonged congestions, fatty connective tissue, and nerve degeneration. A habitual inebriate is one who makes constant use of alcoholic stimulants and is thoroughly saturated with liquor. The mind of such an individual is unquestionably diseased, though it may not be apparent

* Read at the April meeting of the Association for the Study and Cure of Inebriety.

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except upon close investigation; close investigation will show deterioration of the mental equilibrium of some if not all of the faculties; there is to me no fact better established than of inebriety, as well as other mental conditions, being hereditarily transmitted; almost any one of twenty or more years' experience can cite numerous instances showing the liability of transmission to offspring of a peculiar mental disposition; and not unfrequently what was merely a habit in the parent is an uncontrollable desire in the child. It is not always true that the parent transmits the identical habit or actual love for liquor, but there is transmitted a great variety of morbid, weak, mental conditions, a lack of will power, etc. The paralyzing influences of alcohol are upon the intellectual faculties largely, and are seen in the loss of memory, impaired judgment, dullness of observation. A don't care dispotion gets hold. The moral faculties suffer no less than the intellectual; alcohol, alike with opium, seems to paralyze all that is high and noble; sense of right and wrong, of duty and responsibility are destroyed, the lower passions and propensities hold sway. Any general practitioner of medicine is able to call to mind many instances of the degrading influence, the terrible results of inebriety.

Such instance of mental and physical wrecks are familiar. Few persons, save those who have expressly inquired into the subject, have any idea of the extent of the social evils resulting from inebriety. All medical men know with what difficulty we get control of inflammatory diseases of the encephalon as cerebritis, meningitis in alcoholic cases; encephalitis not unfrequently follow a long debauch. "Structural changes" require a longer period for development, as epilepsy, apoplexy, and paralysis. That the habitual use of alcoholic liquors has a tendency to produce certain diseases of the liver will not be questioned by any one who stops to consider the mode of introduction into the system, and influence on the condition of the blood; the blood which returns from the gastric veins charged with alcohol is immediately transmitted through the liver, and acts as a powerful stimulant, stimulating it to increased activity, which can

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only last for a time, when the reverse must follow, and bring about functional inactivity, spasm or congestion.

Since alcoholic stimulants do increase for a time functional activity and a determination of blood to the kidneys take place as a result of alcohol in the blood, consequently these organs are excited to augmented action, perhaps for the purpose of removal of the alcohol from the current of the circulation, we may with reason expect inflammatory attacks of these organs and should also expect that the long-continued excesses would produce a state of chronic irritation and inflammation, with the consequent structural alterations, granular degeneration, etc. I believe that quite a large per cent. of cases of chronic Bright's disease are traceable to alcoholic excesses. In support of such conclusion, of course these cases that are not traceable to such excesses, for it is conceded that alcoholic abuses are especially prevalent among those of the lower walks of life — Bright's disease is peculiar to no sex or station — while this is true, there are others that are peculiar to those of the higher class, as the opium disease, which has even a greater, if possible, paralyzing effect. The primary effect of opium is equally misleading to that of alcohol, a small and occasional dose produces apparently no bad results; there may be a slight increase of reflex excitability, and alleviation of pain, if there was any, but let the opiate be continued for a few weeks, when the habituate will feel weak and depressed without the daily excitant, from day to day, depressing symptoms gradually increases, nervous sensibility is daily becoming more and more paralyzed; finally, the whole system is saturated; nutrition fails; diminished absorption of food follows; the individual becomes emaciated, his tissues are shrunken, with every evidence of a failure of absorption. The failure of the absorbents no doubt is due to the catarrhal condition of the stomach and intestinal track. The catarrhal condition of the stomach produced by the long-continued use of opium is not dissimilar to that of alcohol (such effect, may be stated, is not peculiar to opium or its salts alone but is produced, I believe, by chloral as well), diminished excitability of the sensory nerves is everywhere found in confirmed opium or alcohol cases; hence, both are vaso-motor.

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THE HEREDITY OF INEBRIETY.*

By Norman Kerr, M.D., F.L.S., London, Eng.,

President English Society for the Study of Inebriety; Chairman British Medical Association Inebriates' Legislation Committee; Consulting Physician Dalrymple Home for the Treatment of Inebriety.

Introductory.

With heartfelt pleasure I respond to an invitation from my esteemed friend, Dr. T. D. Crothers, to send a paper on the relation of Heredity to Inebriety. It is always to me a high honor to be privileged to aid, however feebly, in the great work of the American Society for the Study and Cure of Inebriety, inaugurated twenty years ago by its present distinguished president, Dr. Joseph Parrish, whose friendship I have the happiness to enjoy. In England we thoroughly appreciate the unequalled services of Dr. Crothers, especially as editor of the most valuable Quarterly Journal of Inebriety and as secretary of the American Society for the past sixteen years. In their scientific study of the disease of inebriety the whole civilized world owes a deep debt of gratitude to these gentlemen, to my friend, Dr. T. L. Wright, Drs. Mason, Hughes, and many other well-known members of the medical profession in America.

Intoxication is often looked upon as but the product of a moral declension, a sin which the sinner willfully commits, and from which he can easily abstain if he pleases. That this is not always the fact is clearly demonstrated by a study of the family history of inebriates.

In the following observations the general term "inebriety" must be understood to cover patients suffering from all forms of the disease, whether the intoxicant indulged in has been

*Read at April meeting of Association for the Study and Cure of Inebriety.

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alcohol, opium, morphine, chloral, chloroform, ether, cocaine, or any other anæsthetic narcotic:

Family History of 152 Inebriates.

From the Dalrymple Home for the Treatment of Inebriety, at Rickmansworth in Hertfordshire, England (an institution, with a disinterested proprietary, for the special scientific treatment of this disease), 152 patients have been discharged; 61 of these inebriate gentlemen had a family history of drunkenness.

Family History of 600 Inebriates.

There is before me a record of 600 cases which had been treated for inebriety at Fort Hamilton Home, Brooklyn, New York. Of these, 265 had one or more relatives addicted to intoxication.

Family History of 1,500 Inebriates.

In my own private practice as a physician I have had fully 1,500 inebriates at one time or other under my professional care. Of these fifteen hundred I have been able to trace a family history of intoxication in 746 cases.

Inebriate Heredity in nearly Half the Cases.

In this total of 2,252 inebriates there has thus been, in the families of not far from one-half of the whole number, the occurrence of the drunken habit in the person of one or more individuals.

This is, I am persuaded, much short of the truth; for this, among other reasons, that the friends of this class of patients are usually very reticent on the "family failing," and are apt to keep back not a little information as to the alcoholic excesses of their family connections.

Insane Heredity a Cause of Inebriety.

In the American experience fully 6 per cent. of the inebriates had a family history of insanity. In the English experience the proportion was 8 per cent.

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Parental Inebriate Inheritance.

From the American records there was a family history of an intemperate father or mother, or both, in 189 of the six hundred cases, and from the English records in nearly one-fifth of the cases.

Inebriate Atavism.

In America one or both of the grandparents were addicted to alcoholic excess in over two per cent. of the cases. In England the ratio was nearly 5 per cent.

Other Diseases and Facial Types Inherited.

Certain features of the human face are transmitted from one generation to another, and are perpetuated in the descendants. Look, for example, at the Jewish cast of countenance. In the same way certain traits of character are stamped upon various races of men. So, likewise, certain diseases, such as gout and consumption, descend, like a family heirloom, through succeeding generations.

The Disease of Inebriety Transmitted.

As with gout or phthisis, so with inebriety. By inebriety I mean, not drunkenness, but the tendency to drunkenness — not the act of intoxication, but a strong, impetuous, overmastering impulse to, or crave for, intoxication. If not successfully resisted, this tendency increases in intensity and grows in strength. Even when successfully resisted, the diseased tendency is often still alive, though slumbering, all through life, ready, at a moment's notice, to break out in a fierce blaze on the slightest provocation. Many persons of the highest character, strictest integrity, and noblest purpose, though abstainers from all intoxicating liquors, have, simply from having been born with an innate tendency to narcotic excess, to struggle while they live to preserve themselves from drink and drunkenness. This is but one form of the inheritance of what I have ventured to call "narcomania," a mania for intoxication by any or every kind of narcotic,

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whether alcohol, opium, chlorodyne, chloral, chloroform, ether, or any similar intoxicating agent.

Inebriate Heredity Mediate or Immediate.

This perilous inheritance may be immediate, *i. e.*, direct from father or mother, or from both parents. As we have seen, this is the prevailing mode of transmission. "Drunken parents beget drunken children," was a well-known axiom of ancient philosophers, which is increasingly true at this day.

This inheritance may also be mediate, *i. e.*, from a grandfather or a grandmother, or some other relative further off than the parents. Inebriety, like gout, sometimes skips a generation.

Inebriate Heredity Similar or Transformed.

A drunken parent may have a family, each individual of which has a different heredity. Just as an intemperate mother sometimes gives birth, through her intemperance, to an insane child, so an insane mother may, through her insanity, gives birth to a child weighted with an inborn and powerful tendency to drunkenness.

I have known several family histories like the following, in which the alcoholic inheritance was changed into various other forms of brain and nerve disease: The mother and father were both drunkards. One child was an idiot, the second an epileptic, the third an inebriate, the fourth insane, the fifth eccentric, the sixth hysterical. Dr. Howe, of Massachusetts, in his report on idiocy in that State, records that 145 out of 300 idiot children had either father or mother drunken. In these examples the alcoholic inheritance was transformed into idiocy.

Some Cannot Drink Moderately.

There are many other interesting and instructive circumstances connected with the heredity of inebriety; but I have said enough to arouse attention to the importance of a serious consideration of this phase of intemperance. There are

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many of our fellow-men and women who can abstain and can drink to excess, but cannot drink in "moderation." The inherited tendency to excess in narcotics is so powerful that such persons must either be abstainers or drunkards. In abstinence alone lies their sobriety.

Our Duty to the Legatees of Inebriety.

As there are many inebriates who are absolutely powerless to stop short of intoxication if they once so much as taste their hereditary bane, — and as these weighted ones are in peril from our social customs and from the opportunities for procuring their inexorable foe, which so abound all around them, — it is the duty of all good citizens to set their weaker (weaker through no fault of their own) brethren a safe example, to make it easy for them to keep sober by purifying our social life from dangerous intoxicants, and by removing the masterful and fascinating temptations forced upon the community by our existing unrighteous legislation.

It is also our duty to provide genuine hospitals for the destitute, as well as for those able to pay, for the scientific treatment of the subjects of this subtle and transmissible disease, and to so reform our criminal jurisprudence as to secure the medical care of diseased inebriate offenders instead of their punishments as felons. Our motto should be "Cure," not "Punishment."

A bill to set apart a ward for chronic inebriates in the State hospitals of Wisconsin passed the legislature, and was vetoed by the governor. A similar bill lately passed the legislature of North Carolina, and has become a law.

Dr. Horner of Marshall, Va., offered a resolution to organize a section on benevolence in the American Medical Association, the object of which will be to provide a fund for the widows and orphans of physicians.

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A NEW "BACILLI."*

By Willis A. Barnes, Esq.

The medico-scientists of the old world and the new have in these modern times clearly demonstrated that there is existent at all times and at almost all places, various diseases of special kinds, and known by special names, and that these diseases are the effect of a certain well-defined cause.

To the various causes the prefix "Bacilli," this, that, or the other, has been given.

It has also been discovered that the development of the disease awaits only a favorable condition of the human being or lower animal to enable the "Bacilli" to demonstrate its most potent power.

With the discovery of the "Bacilli" we also have a description of its species and their peculiar shape, complexion, and habits, and in almost all we recognize a creature somewhat of the *snake shape*, having a *head and tail*, or what might properly answer for them.

We who are here to-night considering alcoholism in the light of a disease, may, no doubt, be more or less surprised if it should be suggested that there can be such an entity as a "*Bacilli alcoholi;* nevertheless, I am prepared to assert that such is the fact.

My investigations have gone to the extent of isolating this "Bacilli" and producing a "culture" which both in man and the lower animals produces the well-known condition denominated *alcoholism.*

To this "Bacilli" I have ventured to give the name *Bacilli Satanico Majestero.*

I have not adopted this nomenclature unadvisedly or

* This paper is supposed to have been read at a meeting of "The American Association for the Study and Cure of Inebriety."

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without careful consideration of certain peculiarities of the bacillus family generally. I have said that science has discovered that "Bacilli" await only favorable conditions for the development of their peculiar influence.

They go about, as it were, seeking whom they may devour, and upon the most flimsy pretense or invitation enter in and begin their ministration of destruction. This feature, I am enabled to say through my careful investigation, is also peculiar to the *Bacilli Satanico Majestero.* Strange as it may appear, the record of this peculiarity may be found in a very old compendium, which treats of the sanitation of the human being from a moral, mental, and physical standpoint, and there I find a description which fits the "Bacilli," to which I have called your attention, and it is in this language: "He goeth about like a roaring lion seeking whom he may devour." I also find that not unlike the "Bacilli" generally, this *Bacilli Satanico Majestero* is in the *snake*-like form to which I have referred, also having a head and tail, with this difference however, that this "*Bacilli's*" *tail* is bifurcated at its terminus. I may also say that this *Bacilli Satanico Majestero* may be recognized by the human *eye*, the *nose*, and the *tongue*, and under the microscope it appears not unlike a drop of pure crystal water.

The ravages and death-dealing influences of the disease, known as *alcoholism*, is well known to all students of sociology and scientific medicine, but it now remains for science to discover (as it must with regard to several other of the "Bacilli" family) the potent power which will absolutely abort the destructive influences or cure the disease which is produced by the *Bacilli Satanico Majestero.*

I may, however, say that investigations have gone to the extent of proving that unlike the "Bacilli" of some well-known diseases the *Bacilli Satanico Majestero* cannot be destroyed in the human body by cutaneous injection or other mode of introduction of *sterilized Bacilli Satanico Majestero*, on the contrary I find that the disease is very positively promoted by such treatment, and that death is likely to follow.

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Naturally the question will be asked, Has any progress been made towards the discovery of a destroyer of this *Bacilli Satanico Majestero?*

Adopting the tone of the distinguished *Berlin scientist*, it may be said that experiments have been made, and are now being made, with this object in view, but the science of the treatment has not progressed with such perfection of result as to justify at this time any extensive description.

It may, however, be stated that the new treatment comprehends largely the administration of true tonics in the form of nutrients, and the isolation of the patient within an environment known to be absolutely free from the presence of the *Bacilli Satanico Majestero.*

In chronic inebriety, disease of the brain may destroy all apparent consciousness of pain, and keep in abeyance the outward and appreciable manifestations of the important indications of organic mischief. Extensive disease of the stomach, lungs, kidneys, bowels, uterus, and heart have been known to have progressed to a fearful extent without any obvious recognizable indication of the existence of such affections. The most essential preliminary matters for inquiry relating to the treatment of inebriety have relation to the age, temperament, previous occupation, and condition in life of the patient. It will be necessary to ascertain the character and duration of the attack; to ascertain whether it has resulted from moral or physical causes; if of sudden, insidious, or slow growth; whether it has an hereditary action, or is the effect of a mental shock or of mechanical injury; whether it is the first attack, and if not, in what features it differs from previous paroxysms. It will also be our duty to inquire whether it is complicated with epilepsy, insanity, suicidal or homicidal impulses.

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Abstracts and Reviews.

INEBRIETY NOT A DISEASE.

What is disease? Any accepted dictionary will define the term sufficiently for our purpose. On reference to my "Imperial" I find this interpretation: "Any state of a living body in which the natural functions of the organs are interrupted or disturbed, either by defective or preternatural action, without a disruption of parts by violence, which is called a *wound*." Assuming that this is technical enough in its terms to meet a reasonable demand, as far as any brief definition may be and retain clearness, we are warranted in considering anything in the conduct or habit of a person that produces a disturbance or interruption of the natural functions as causative of disease. The domain of causes is very large, and it is altogether unnecessary for the purposes of argument to go into an extended citation of them. Everything with which man has to do may be made accessory to his physical injury, and therefore lead to disease in some form. What, when employed in moderation, will contribute to his strength and vigor, may in excess become productive of serious functional disturbance, with resultant organic break-down, even to death. The physician has frequent occasion to warn against "too much of a good thing," and in his sphere as a healer he has occasion to know, often in a most striking manner, that a substance employed for a benign purpose may badly aggravate his patient's suffering, or lead to the development of new and discouraging symptoms.

Our grandsires deemed our remedy of the highest importance, and which in nearly all instances was made either a constituent of their prescriptions, or associated with the treatment. As a tonic, as a stimulant, as a narcotic, as a food, as a sedative or placebo, the bottle of brandy or strong

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wine, was to be seen on the table in the sick room, and upon it the nurse was expected to make frequent calls for dosage during the day. With our remembrance of the opinion laid down in the old medical authorities — Anstie, Carpenter, Cullen, Hunter, etc., this respect for alcoholic compounds was a reasonable characteristic of the practice of fifty years ago. But to-day, in all the glare of physiological and chemical research, for a man to stand up and advocate a similar procedure would necessarily relegate him to the dark ages of medical ignorance, or condemn him for willful indifference to scientific demonstrations.

It is understood by the physician that in dealing with the articles listed on his posological table he is dealing with poisons for the most part, with the warnings of such observers as Lewin, Ringer, Rossbach, Nothnagel, Tanner, Lloyd, in mind; he knows that it is always necessary to be watchful in consideration of his dose quantities, for in spite of every precaution he will sometimes have untoward effects that may give him occasion to sign a certificate for the use of the undertaker. A teaspoonful of magnesium citrate, simple as it appears, administered at the wrong time may produce a convulsion and break down a feeble heart. A tenth of a grain of morphia given in the critical stage of capillary bronchitis, with the best of intentions for the suffering patient, may cure him of his pain forever. With a long list of articles pronounced toxic we find alcohol, with a multitude of qualifications that certainly stamp it as one of the most insidious of poisons.

One of the old English writers on *materia medica* — Dr. Anthony Todd Thompson — an advocate of its use in moderate quantity in low fevers, etc., says of the habitual use of diluted alcohol: "By degrees the mucous membrane of the stomach, and even the other coats of that viscus, suffering under repeated attacks of inflammation, undergo changes of structure, and indurations supervene which occasionally degenerate into cancer of the pylorus, or inflammation of the liver, palsy, dropsy, epilepsy, and many other bodily ailments

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overpower the vital energy of the habit . . . . The vessels of the portal system are compressed by a preternatural contraction of the fibres, the result of which is impeded circulation and ascites. A similar morbid condition is also frequently induced in the kidney which becomes granular, and secretes albuminous urine. Both diseases terminate fatally."

Thus for medical authority fifty years ago. What says therapeutics to-day with reference to the same ethylic compound? Quoting the eminent B. W. Richardson: "But even in respect to the medicinal use of alcohol you cannot be too careful, you cannot be too exact, you cannot be too watchful, you cannot be too industrious. You are bound to ascertain from day to day, from hour to hour, that your practice is sure, and to determine how far you can correct it by reducing the employment of the drug to the smallest possible amount." This is emphatic language. Belladonna, arsenic, morphia, aconite, hyosciamine, rhus, trinitrin, are very dangerous products of the laboratory, but of them no such language is found in the books. Another respectable authority, Dr. R. L. Bailey, said on a public occasion: "Instead of being a valuable adjunct of the medicine shelf, alcohol is one of the most prolific sources of disease. The effects upon the lungs, stomach, heart, liver, brain, and kidneys are well known, and tens of thousands of cases of disease of these organs are primarily produced by its use."

With such extensive disturbances of the vital economy as I have noted, there must be associated conspicuous disturbances of the mind. Indeed, we know that the mental action is affected in a double way from at least two causes of organic disturbance — (1) the altered blood content by which less than the normal quantum of nutrition is supplied to the cerebro-spinal system; and (2) the direct actions of the alcohol as a toxic agent upon the brain centers, with its consequences of inco-ordination, so characteristic in the expression of the inebriate that the children in our street recognize the unfortunate victim of the bottle at sight. The pathol-

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ogist knows how potent slight changes in the constitution of the blood are in producing brain disturbance with phenomena of varying intensity, in the expression of faculty, from simple loss of memory to delusions of sense and of idea, from entire want of intelligent apprehension to wild delirium. Need it be said, with the approval of the eminent Gowers, that those who are addicted to alcohol are especially subject to those effects of blood change that are manifested by mental excitement and delirium. Their brain centers have lost normal stability through degenerative changes that may resist the most skillful treatment designed to restore them. Indeed, with the best result, the alcoholic neurosis, as indicated by exaggerated reflexes, paralysis, explosive outbursts of temper and other phenomena of impaired cerebration, may never be corrected — the man remaining till death a more or less uncomfortable valetudinarian. The simple definition of disease with which we started would appear to be met to the extent of the most critical demand by the categories of physical and mental disturbance that I have enumerated. And yet there are some of accepted prominence among us who reject these demonstrations, and insist that inebriety is not a disease!— *Dr. Drayton in Phrenological Journal.*

ALCOHOLIC INSANITY.

Medical authorities commonly divide alcoholic insanity into status inebriosum and alcoholism — acute and chronic.

The action of alcoholics is not considered insanity either by the medical or legal profession, until its habitual or period use has caused more or less permanent modification of the brain cells, manifested by characteristic mental phenomena. In this condition, though the microscope may fail to reveal any pathological changes, the continued mental observation is considered sufficient evidence of their presence, due to defective cell nutrition — the condition often remaining after the drink habit is abandoned.

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This permanent observation is noticed first in deranged normal action, deranged power of self-control, disregard of duty and of the rights of others, and is followed by defective mentality and muscular co-ordination. The only difference between the symptoms and those of a transient drunk is their permanence.

The spirit may be immortal, and when loosed from the body its action may be independent of matter. Of this the physician knows nothing. He only knows that while united, mind acts through matter, and that its action is dependent upon the condition of the instrument through which it gathers, correlates, and evolves thought; that whatever injures the functions or structure of that portion of the brain through which mentality is effected, is manifest in deranged and irresponsible mental action; that while traumatism and permanent pathological changes produce directed mental and moral action, a large number of drugs produce the same results, and that though the deranged action may be transient, lasting only during the therapeutic action of the drug, the insanity is as positive and real as though dependent upon permanent and demonstrable pathological expressions.

Thus we find alcoholics, when taken in excessive quantities, producing a temporary insanity in every respect parallel with that permanent insanity consequent upon their habitual use. In all alcoholics, H is greatly in excess of O, and wherever in unstable combinations this excess exists, the H demands, at whatever cost, O. When such a combination enters the circulation it deoxidizes the various tissues with which it comes in contact, deranging their functional action and leaving an excess of C, thereby producing an anæsthesia that ranges from slight paresis to complete insensibility and coma, and loss of mental and muscular co-ordination, manifest in the erroneous deduction from impressions made upon the senses and the staggering gait of the drunken man, varying with individual idiosyncracy. When this condition obtains, whether produced by alcoholics or other agencies, whether lasting for a moment or a lifetime, should the

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individual be held responsible for his utterances or his acts? Is not the transitory insanity as pronounced while it exists as if permanent, and the individual as powerless to arrive at correct conclusions from given premises and as irresponsible as though the victim of chronic inebriism or mania-a-potu? Why, then, the medical and legal distinction? — *Editorial in Kansas Medical Journal.*

THE *Thirty-Third Annual Report of the Washingtonian Home at Boston, Mass.*, is before us. This is the oldest inebriate asylum in the world, and its veteran superintendent, Dr. Day, has had the longest service and the largest experience of any person living. Three hundred and eighty-three have been under treatment during the year, sixty-four of whom had delirium tremens. Dr. Day presents a long and very interesting report, in which he discusses the antiquity of inebriety. The following is a closing extract; we advise all our readers to send for a copy of the report:

"We cannot come to any other conclusion when we individualize upon the subject, than that every habitual drunkard should be regarded as a monomaniac, and that he should be treated as an insane man both in law and in fact, according to the humane and enlightened principles which prevail at this day in the department of medical ethics and jurisprudence. Let him receive nothing but kindness and sympathy properly manifested. He does not want to be pitied. Nothing will excite and disgust such men as it will to tell them you pity them. He will often put in a plea of extenuation, and allege that he 'cannot help it,' that he has made the effort again and again; that he has sincerely, honestly, and faithfully tried to abandon this destructive habit, but he 'cannot help it.' And he tells you the truth; nor need we envy the head or heart of him who doubts it. In the exercise of every mental power he now possesses, with all that is left to him of moral agency and volition, it is true that he cannot. Instead of denying or doubting the truth that he

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cannot help it, we are to believe and acknowledge that it is even so; and now we will convince him that we understand his case, and intend to do him justice, and propose to help him to do what he cannot do for himself. Such, in brief, is the essential principle, without the details, of the treatment at the Washingtonian Home."

WHAT SHALL BE DONE WITH THE INEBRIATE?

This question continues to attract the attention of students of sociology, and of recent years has acquired new interest from the consideration which it is receiving from other classes than those which formerly gave thought to its solution. It is still an open question as to whether the medical profession has contributed its share to this study and utilized as it should have done the great influence of which it is capable. The earlier agitation of the subject of drunkenness and the care of the inebriate was so much under the dominance of the fanatic and the sentimentalist that this fact still influences largely the medical profession to look upon the whole matter as possessing nothing belonging to the profession of medicine, being altogether one of morals. The fact is, that when rightly understood, the proper care of the inebriate and the abolition of inebriety can only be intelligently and successfully accomplished by medical skill. These questions require for their solution a knowledge of physiology and pathology, as well as of the laws of heredity and the true relationship of morals to physical structure.

To understand aright the subject of inebriety and the influence of the excessive use of alcohol upon the human organism it is necessary to have a clear conception of the scope and limitations of this influence. The prevalence of the use of alcohol by the human race through all ages and among all nationalities has given foundation for the widespread belief that all human beings are alike susceptible to its influence, and in like degree in danger of becoming its victims. More careful investigation and a more intelligent

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analysis of data do not substantiate this belief however. More modern and more scientific application of physiological laws goes to prove that, as concerns the influence of alcohol on the human system and the formation of a demand for its excessive consumption, individuals may be divided into three classes.

The first of these, comprising by far the larger number of the social units, is composed of those persons so constructed anatomically, and with tissues of such physiological habits and tendencies, that no demand for the excessive or injurious consumption of alcohol can ever arise. Such persons, no matter what their environments or their education, cannot become inebriates. We say cannot, advisedly, for in such persons it is not so much a question of volition as one of the limitations of physical structure.

The second class, a comparatively small number of the sum total of the population, is composed of those who are structurally so deficient, with such feeble resistance to impressions, and such weakened inhibition, that, practically, no matter what their environment, or what their education, they will inevitably and as a necessary sequence of their organization, fall victims to its destructive influence.

The third class, a relatively larger number than that last considered, but after all but a small part of the entire population, comprises those whose structural potentialities are such that their subjugation to this influence and the development of an organic want for the stimulating effects of alcohol will depend entirely upon the kind of environment and education to which they may be subjected.

If these statements be founded on fact, the necessity for an intelligent study of the subject of inebriety by all physicians becomes apparent. The physical deficiencies, limitations, and potentialities of every individual should engage their attention to the end that the proper course may be pursued toward each, and at least an intelligent and approximately correct opinion given as to his future course.

To which class does a given individual belong, and how can his proper location be determined?

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The first class will require no attention.

The second is that which will most frequently demand it. Their helplessness must be constantly supplemented by the strength of their fellows, and the best interests of society demand first, their protection and restraint, and second, a speedy and effectual limitation to a further propagation of their kind.

The third class is that which justifies and demands the efficient regulation of the traffic in alcohol as a beverage, and the interposition of sufficient safegards against their inherent potentialities to prevent their destruction. In those instances in which this has been deficient or ineffectual, the rights of society and their own best interests demand careful scientific treatment and effectual restraint, to the end that they may be restored to healthy independence and resistive power. — *Editorial in Lancet-Clinic, by Dr. Richardson.*

TREATMENT OF INEBRIATES.

At a meeting of the town council at Aberdeen, Scotland, a resolution was passed "requesting the Lord Provost's Committee to consider the question, and report as to the practicability of introducing some scheme of a reformatory and curative nature for the control and treatment of habitual drunkards." On this Dean of Guild Macdonald argued that there was no reduction of drunkenness with a reduction of licenses. His cure for the evil was to stop the demand. Drunkenness was a disease, and as such it was not punishment, but treatment of a reformative and curative nature, that was needed. Let them deal with the inebriate as they had dealt with the maniac. The disease of inebriety resembling, as it did, the disease of insanity, it was as much the duty of the Christian and the statesman to establish homes for the treatment of inebriates as they acknowledged it to be their duty to sustain asylums for the care of the insane. The protection of the inebriate from himself, his friends, and the community would also be more effectual if confined for a period in a home where the physical and mental system

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would be carefully looked after and properly treated. Medical science had revealed the existence of a class of inebriates who were the subjects of disease as clearly defined as were neuralgia and nervous debility. The Glasgow Town Council a few weeks ago appointed a committee to investigate this subject. The Aberdeen superintendent of police suggested a plan of treatment of the inebriates to put them into a reformatory that would be self-supporting. In the Highlands of Scotland there were thousands of acres of land that could be cultivated. Could not that land be reclaimed and made productive? There let there be tweed mills, and they could utilize the water power for the production of electricity. There also they would have the inebriate far removed from the "madding crowd," from the "busy haunts of men."

THE CYCLOPEDIA OF TEMPERANCE AND PROHIBITION. — A reference book of facts, statistics, and general information on all phases of the Drink Question, the Temperance Movements, and the Prohibition Agitation. Funk & Wagnalls, Publishers, New York City, 1891.

This work comprises nearly seven hundred pages, well printed in good, clear type. The matter varies widely in accuracy, quality, and quantity. The article on alcoholic legislation in the different states would make a most valuable monograph of itself. This alone gives the work unusual interest. The biographical sketches of persons who have been prominent in the temperance work are apparently thrown in to fill up. Dr. Richardson's article seems to have been written for the same purpose. The papers on the *Republican*, *Democratic*, and *Prohibition* parties are of very doubtful value, and unsafe authorities to trust. Why scraps of old sermons, special pleadings, and statements that never had any basis of truth should appear in such a work is a wonder. As a cyclopedia of prohibition it is commendable; but as a temperance cyclopedia it is open to severe criticism,

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and is clearly the work of a novice, even down to the index, which seems, like other parts, merely thrown together.

Notwithstanding the faults, which are many and unaccountable in a work of this kind from such an eminent publishing house, there is much to commend. Its value as a grouping of literature not to be found in any other form will be welcomed. Beyond this it will mark an era in the growth of public sentiment, pointing out an advance that is not suspected by many persons who are not close observers of the signs of the times.

As a foundation for a more accurate and thorough grouping of the literature in this field this work will have its place in the history of temperance advance.

CHILDREN OF INEBRIATES.

Dr. Grenier in a Paris medical journal gives the result of 188 observations of individuals whose parents were subject to inebriety. Among some of the facts found from this study are the following. The morbid influence of the parent on the child is greatest when conception takes place at the time when one or the other of the parents are intoxicated. The children of inebriates have a decided propensity to similar excesses, and over one-half of the cases noted by the author came from inebriate ancestors. The majority of children from this parentage suffer from convulsions in infancy. Epilepsy is a neurosis that we may consider almost characteristic of inebriety in the parents; when it is not directly inherited itself, it is a sign of general neuropathic heredity. From their mental condition the children of inebriates are more liable to become insane, and they always furnish an enormous contingent to the ranks of the insane. Every form of insanity is observed among them. Alcoholic insanity is far more frequent in these descendants than among others. A general intellectual and physical degeneration always follows. — *Journal of Insanity.*

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THE DISEASES OF PERSONALITY; By Th. Ribot, M.D. Open Court Publishing Co., Chicago, Ill., 1890. Price, 75 ecnts.

This little volume of nearly two hundred pages is a very clear philosophical discussion of organic disorders, emotional disorders, disorders of the intellect, and dissolution of personality. Personality is defined as the highest form of psychic individuality, also that the higher forms of individuality must have proceeded from the lower by way of aggregation and coalescence, and that individuality at its highest degree in man is the accumulation and condensation in the cortical layer of the brain of elementary consciousness, that were autonomous and dispersed at their origin. Consciousness is a physiological state, and a phenomenon. The discussion of the various disorders which affect the personality of individuals are of the greatest interest to the specialist. Some of the obscure symptoms noted among inebriates are clearly outlined in this study. The chapters on disorders of the intellect and dissolution of personality are invaluable, and we commend this book to all our readers as the most satisfactory and suggestive study along this new line of physiological psychology that has appeared.

FUNDAMENTAL PROBLEMS: THE METHOD OF PHILOSOPHY AS A SYSTEMATIC ARRANGEMENT OF KNOWLEDGE; By Dr. Paul Carus. Second Edition, Enlarged and Revised. 372 pp. Price, $1.50. Open Court Publishing Co., Chicago, Ill.

Dr. Carus has grouped a large number of short papers on philosophy and ethics in such a clear and concise form as to be attractive to all readers. It is particularly valuable as a short summary of the chief lines of modern philosophic thought, which busy readers must read in brief, if at all. all the topics are stated with great candor and frankness, and in a broad scientific spirit.

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"JOE BROWN," DOCTOR, ON ALCOHOLISM, ITS CAUSE AND CURE. E. SCOTT, PUBLISHER, 134 W. 23d St., New York.

A very readable book; interesting and instructive; full of incidents bearing on the subject. Should be promptly read by all interested in the Temperance cause, or presented to their friends who are liable to become victims to "Alcoholism." Price 50 cents; sent by mail on receipt of price.

The Unrestricted Evil of Prostitution, by A. F. Currier, M.D., is a pamphlet of twenty pages, just published for general circulation. It was prepared for the Hygienic Section of the New York Academy of Medicine, and is an able, thoughtful discussion, from the scientific and historic points of view, of the general subject of prostitution, the evil and the remedy. It merits a wide circulation. Price by mail ten cents. Address, THE PHILANTHROPIST, P. O. Box 2554, New York.

The Homiletic Review for July opens with an admirable article, from the pen of Prof. J. O. Murray of Princeton, concerning Culture in its Relation to Preaching. The Present Status of the Divorce Question is treated by the Rev. Samuel W. Dike, LL.D., whose well-known acquaintance with the subject gives his article an authoritative value. Dr. C. B. Hulbert writes of the Biblical Tests Applied to Recent Claims. An article entitled Exegesis in the Pulpit, written by Dr. Howard Crosby shortly before his death, demands familiarity on the preacher's part with the original languages of Scripture, and an exaltation of the Word above everything else in the pulpit. Dr. J. Spencer Kennard closes the Review Section with a readable and suggestive article on Action and Acting.

The *Popular Science Monthly* illustrates the evolution of all culture and science in each issue. It brings clearer and ever-widening views of the march of science from the pens of the pioneers at work on the front lines. It has no competitors and stands alone in science.

The Soul of Man, noted in our last issue, by Dr. Paul Carus, is a rare work of lofty physiological psychology. To the medical man it is very stirring and suggestive, rousing up new thoughts and new ranges of facts, very helpful to all readers.

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Editorial.

ANNIVERSARY MEETINGS.

The twentieth anniversary of our association has been celebrated by a series of meetings in the hall of the New York Academy of Medicine, of more than usual interest.

The difficulty of holding monthly meetings, where the members were scattered all over the country, was happily overcome, although it was found impossible to present any connected study of inebriety. The different phases of the subject had to be taken with regard to the available speakers who would come. The first evening was devoted to the relations of alcoholic and opium inebriety to life insurance. Some new facts were brought out, and old ones restated with greater clearness. The second evening the pathology of inebriety was presented, and the action of alcohol on the blood and tissue shown in lantern slides. A synopsis of the Mason prize essay was given and discussed. The papers and discussions which followed carried the subject on in advance of any previous efforts, and suggested some new fields of investigation. In the third meeting the therapeutic value of alcohol was presented, and several very interesting problems came up, which were treated with scientific candor and frankness. The fourth meeting was devoted to the etiology of inebriety, and a number of excellent *résumés* of the facts known were given. The fifth meeting closed the series in some excellent papers on the heredity and treatment of inebriety.

Scientifically these meetings exceeded all expectations, and created surprise among the older members to find the warm endorsement and ready acceptance of facts and conclusions that were sharply opposed up to a very recent date. While the audiences were small, and many of them came

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from curiosity, it was evident that a new and growing interest had begun which needed but little cultivation to enlist a large circle of enthusiastic students.

These meetings made clear the fact that many physicians are yet in doubt as to the place of alcohol in medicine, and hence are unprepared to accept the facts of disease. The theory of vice and possible disease in extreme stages still exists and is a most unfortunate implication that its advocate is not an original worker or thinker, but prefers to accept the views of others rather than make observations for himself. To the older members of the association, who have been students in this field, these meetings gave voice and expression to many phases of the subject that are coming up in private practice, and are agitating the public mind, which are strictly problems of science, and not questions of ethics.

The value and importance of our association never appeared so clearly, and the field of scientific work never seemed more inviting for the harvest. While these meetings have not attracted much attention they have been the initial point of a great movement in the near future, and our association is to be congratulated on beginning the new quarter of a century in this auspicious way.

RECOGNITION OF DISEASE IN INEBRIETY.

The *Voice* publishes the answers to a series of inquiries addressed to the officers of twenty-one leading railroad companies in this country. A leading company discharged a number of men for signing a petition of saloon-keepers for a renewal of license. The *Voice* made inquiries of all the leading companies as to what the rules and practice were concerning employes who were moderate or excessive spirit drinkers. The answers were, uniformly, that such persons were discharged as unfit for any duty, and as always unreliable and untrustworthy. One company asserted that any use of spirits was likely to render the man abnormal, and unfit him for responsible work. Also, "the man who drinks

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is no more responsible for getting drunk than one who exposes himself to malaria is for having a chill."

One company asserts that barroom frequenters will not be employed, and any employe found about barrooms will be discharged. All companies unite in the statement that only rigid abstainers can be trusted in railroad service. They also express a strong conviction that this rule applies to all other branches of business. This is a direct recognition of the disease of inebriety, and the incompetency of all persons, both moderate and excessive users of spirits, to act normally and rationally. Railroad companies have no theories, but are governed altogether by experience and common sense facts. From this point of view all use of spirits renders the victim more or less incompetent for healthy muscle or brain work. The victim is sick, debilitated, and cannot be trusted, and will always fail to act along healthy, rational lines. This fact of disease we have urged for years; now railroad and other companies who employ men, and study their capacities, come to the same conclusion from a practical point of view.

The *Voice* is unconsciously doing grand service in bringing out the facts, which have another meaning than to show the value of total abstinence, or the need of prohibition. It confirms the fact of disease of the victim, and shows that the use of spirits is a symptom, as well as a cause, and incompetency, unfitness, and progressive degeneration is always present. When the disease of inebriety is recognized there will be no hesitation or doubt, and our duty will be obvious and above all question.

A GENTLEMAN was most profoundly excited in witnessing the narrow escape of a steamer from crushing into an iceberg in the summer of 1884. For years after, when relating the circumstances, he manifested much excitement. In 1890, he came under treatment, suffering from alcoholic delirium. He imagined that the walls of the room were towering masses of ice, ready to crash down on him, and

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shouted frantically to back the ship. These ice masses or icebergs advanced and receded suddenly or slowly, and appeared to threaten him on all sides, leaving only a narrow passageway through which he barely escaped. He would jump to one side as these icebergs would fall, and break to pieces in great noise at his feet. A sense of joy would be manifest in prayers and exclamations of thankfulness. Then new dangers would reappear, and he would shout out warnings and tell the captain of the size of the berg and its proximity, and be in agony until the danger passed. This delirium slowly gave way, but for days after he would spring up and call out that bergs were near; then recover and say it was all a dream.

SCIENTIFIC TREATMENT OF INEBRIETY.

The treatment of inebriates is invested with much mystery and superstition in the minds of the common people. Every few months the old superstition is revived and goes the rounds of the press, that in certain asylums inebriates are surfeited with spirits; everything that is eaten or drank is mixed with spirits, until at last the spirit taste is destroyed, never to return again. The only basis for this was an experiment made in Bonn, Germany, in 1863. Three inebriates were confined in a house and treated this way, by mutual consent. Two had delirium tremens, of which one died within a week. The other lived two months and died from paralysis. The third became insane, and was sent to an asylum. The experimenter was sentenced to prison for life. No man with any practical knowledge would ever take the risk of such an experiment. No such method was ever attempted seriously, for the reason that nothing could be more certainly fatal to both the patient and the experimenter.

Another delusion is also common, that some medicines may be given, which will destroy the craving for spirits; or some kinds of food will have the same effect. All the

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numerous quack specific remedies for inebriety are based on this. Practically all these remedies are narcotics in disguise, and merely change the drink craze from the narcotic of alcohol, to some similar drug. Opium is the most common, because it is cheap, and can be disguised. Fusil oil is another very common ingredient of alcoholic specifics. Cocaine is also greatly used. It is safe to say that all these specific remedies for the cure of inebriety are not only worthless, but literally more dangerous than the alcohol itself. One of the shrewdest of these quack methods (sold for ten dollars under the ban of secrecy) was a solemn oath not to use spirits for six months, to be signed in blood, which was furnished by the victim, and a pledge to submit to the most horrid tortures, if he violated this oath, together with dark hints of how the advertiser could find out his failure to keep it, and how the punishment would follow. No medicines were given, simply an appeal to the fears and imagination. Strangely, this method has the strong endorsement of many persons who claim to have been fully cured by it.

Another less scrupulous schemer advertises a sure cure for inebriety to be sent for five dollars in advance. In return the victim gets a plain card on which is printed, "Stop drinking, and mind your own business." Over a dozen specific medicines are advertised for the cure of inebriety, all of which are base swindles, and yet they flourish and fatten on the superstition and credulity of the poor victims, who are looking for help. If the friends of the inebriate would exercise common sense, and observe closely the history and conduct of such cases, very different impressions would appear. When the inebriate and his friends become alarmed, and begin to look about for help, the case has always reached an advanced stage and become chronic. To this there are very few exceptions. A man who has been intoxicated many times, or one whose steady drinking has so far impaired his power of control that he cannot stop practically, no matter how strong he may appear otherwise, is an advanced case. All mild methods and remedies are useless.

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A man just beginning to use spirits may sign the pledge, and be helped by prayer permanently, but later, when the continued use of spirits has impaired his higher brain power, and made him more or less incompetent to realize his condition or to appreciate the relations which he sustains to the world and his friends, such means are largely powerless. They are not to be ignored, but are to be used experimentally with other methods.

All inebriates are brain and nerve exhausted cases of necessity. Alcohol has in all cases perverted and damaged the nerve processes and functions, and debility and exhaustions with lowered vitality is always present. Such cases require positive, tangible, physical remedies. Appeals to the mind and spirituality of the man are addressed to defective and damaged powers of the brain. He must be taken out of his old surroundings, he must have new environment, new conditions, that can be regulated and anticipated by others. No matter what his life has been, he must have a change of all his conditions of life and living. This can be had most perfectly in an institution. Here he can be free from the contagion of spirits, the drugs can be kept away, and he can be protected from gratifying every morbid impulse to procure it. The diet and regularity of living can be enforced, and all the conditions of physical vigor and training can be put in force. The man must be trained back to sobriety, not driven back, or coaxed, or pledged, or converted, but taken back step by step along the line of natural laws of growth and development. His body and brain must be trained and developed, as far as possible, to abstain from all narcotics of every kind, of which alcohol is the most dangerous. He is sick, palsied, worn out prematurely, and needs nerve and brain rest. The failure to live a temperate life is the evidence of this. This training process has for its first object the physical development — the improvement of nutrition by regular diet of the best character; the building up of the brain by medicines, rest, change, and diversion; the repair of the organs of the body by exercise and baths.

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The higher brain power soon feels the new life and vigor from this process, and responds to the prayer and pledge, and the efforts to live a more rational existence. Many poor victims from all circles of life have never been in training along these lines of physical and mental development. For the first time they realize the power of correct living, correct, healthy surroundings, the need of brain rest and brain culture along paths they have not known before. The worn-out money-seeker dies, leaving a fortune and a family of low vitality, unable to bear the strains and drains of a busy life. Unconsciously his children turn to alcohol and opium for relief, and soon become helpless victims. The asylum, with its quiet, steady applications of nature's forces addressed to all parts of the human body, is the only hope for the future. There is no "short cut" or by-path to a healthy temperate life. No specific remedy that will remove the tearing-down process of alcohol. No will-power that can restore the lost vigor or damaged brain centers of control. To stop the use of spirits is only one step; to repair the conditions for which alcohol is unconsciously taken is another equally important. It is not only a question of original causes, but is one of present conditions. The inebriate has a compound and comminuted fracture that requires the application of splints and bandages, and every condition for restoration along the lines of nature's laws. The scientific treatment of inebriety is simply the application of every means known to science, experience, and common sense; to remove the patient to the safest surroundings; to repair the injuries done to body and brain, and build up the man so as to prevent future failure. This can only be done effectively in literal training hospitals, where the physical comes first, then the mental and spiritual. It is no implication that the exclusively moral means urged by many good people are not valuable, but science teaches that their value depends on the conditions and time in which they are used. The appeal, pledge, or prayer does not reach the starving man; but give him food to build him up, and these means are valuable. The inebriate is starved in a

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most literal sense, and needs relief and physical help first. All scientific asylums and hospitals where inebriates are treated are based on this fact: Removal of the spirits and repair of the brain and nervous system gives the most certain possibility of cure and restoration. Experience shows that a certain increasing number of inebriates are permanently cured in these places every year. Unfortunately for asylums, nearly all these curable cases disappear from view, and never refer afterwards to the benefit received from such places. Public sentiment makes it necessary for many persons to conceal this part of their life. On the other hand, the incurable who has not received any permanent good, takes pains to condemn the asylum and its work, and is a standing monument of his own failure. The very few asylums now in operation are only the advance guard of a new era in the cure and treatment of these cases. There are many reasons for believing that not far away in the future every town and city in the country will have hospitals for this class, the same as for the insane at present.

WHAT ARE SOME OF THE PATHOLOGICAL FACTS OR INFERENCES ON WHICH INEBRIETY MAY BE CALLED A DISEASE?

The exact study of inebriety has not advanced beyond its etiology, and yet a large number of facts outlining both the pathology and psychology are coming into view with increasing prominence. A grouping of some of these facts will show the direction which this study has taken.

Like insanity, inebriety is found to be a symptom produced by many morbid conditions, which may come from disordered states of the brain and nervous system, or from the effects of external conditions acting on the brain and nervous system. Etiologically a large per cent. have a traceable causation, and are divided into symptomological groups or classes based on the causes. Thus heredity is a very prominent cause, and periodicity is a common symptom.

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The period anterior to the drink symptom is marked by the uniform operation of distinct causes, both predisposing and exciting. In some cases these causes are very clear, in others obscure; but the indications of physical changes and conditions that will appear from future and more accurate studies are unmistakable.

The known action of alcohol on the heart and brain circulation gives only a faint conception of the injury produced on the brain and nervous system. Take the common fact of over-excitation of the brain from continuous or occasional use of alcohol. The heart's action is increased from ten to twenty beats per minute, followed by reaction, and an equal slowing up of the pulse rate. Hyperaemia, vaso motor paralysis, interference of nutrition of the cells, retention of the products of metabolism, is the result beyond all question. This over-excitation of the brain from the unknown action of chemical substances is far more serious and complicated than psychical and emotional over-excitation. In the latter insomnia, mania, melancholia, and various forms of brain disease follow. In the former all these stages or symptoms of brain injury may be condensed in a brief time, as seen in the mania, melancholia, and dementia of intoxication. These symptoms, always characteristic of profound disturbance of brain action, are reproduced in degree in all cases of inebriety. The result is, always, impaired nutrition, disturbed functional control, and in all probability a series of sub-inflammatory processes and abnormal deposits. To this may be added an unstable, defective brain, from heredity, from disease, and injury. In such a condition the effects of alcohol or other narcotics are beyond all present knowledge. The over-excitation from these chemical substances (in the highest degrees of health known) is very marked, and creates a morbid impulse to continue their use, even when the effects cause pain and misery. In persons of defective brains and feeble control the action of these chemical agents must be more serious in their effects. Clinically, this is confirmed by the precipitation and impulsive insane use of spirits, in

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many cases. Beyond the strain on the heart and brain from abnormal activity, unknown chemical products are formed, and the eliminative processes and degenerations of cell and nerve action are changed, and the complexity of the pathological facts extend far beyond all present conceptions. The periodicity of the drink impulse, and the continuous use, either in excess or moderation, point to a distinct pathology that awaits future study.

The use of alcohol in any degree is attended with danger and unknown chemical and pathological changes, which may be created or precipitated into activity by this agent. The certainty of disease, and disease processes following, is far more positive than any possibility of nature's restoring and readjusting the derangement, from this chemical over-excitation.

BROOKLYN HOME FOR HABITUES.

An opium hospital with the above name is started in Brooklyn, N. Y. A temporary building has been opened until a permanent one is erected. The plans are completed and the ground will be broken for the hospital within a few weeks. The following quotation from the circular explains the work: "The location is peculiarly adapted for the purpose in view, as all the advantages of the city, such as gas, water, and electric light, are combined with the delightful air and rural surroundings of the country. The home is designed for the treatment of such cases of morphinism, chloralism, and cocainism as present a reasonable chance of recovery. No patient will be accepted who does not agree to remain a sufficient length of time to effect a cure, and no case is taken where the patient is a sufferer from organic disease which necessitates the use of narcotics. The habitual use of narcotics, hypodermically as well as internally, especially morphine and cocaine, is rapidly increasing, and an institution of this kind is much needed for the relief of the many victims of the drugs which are slowly but surely sapping their vitality. No

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real cure can be effected in such instances unless the patient desires it and only those who are doing their utmost to free themselves from the terrible disease are admitted to the new home.

"The majority of this class of patients are professional men, who have commenced the use of the drug to bring sleep to the over-worked brains. Others resort to narcotics to allay the pain caused by neuralgia or some local affection, which must first be cured before the disease produced by the drug can be attacked. While these diseases are treated in general hospitals, inebriates' homes, insane asylums, and private sanitaiums, there is no institution in the world, so far as is known, except the Brooklyn Home for Habitues, which is exclusively devoted to this purpose. The home is a quiet, charming retreat, with no suggestion of a hospital, and has all the conveniences and luxuries of a well-appointed private residence, as well as an excellent medical service."

The well known specialist, Dr. J. B. Mattison, will be the superintendent in charge. His long experience and national reputation will make an assured success of the hospital from the beginning. An endowment of sixty thousand dollars is called for to provide some free beds for the worthy poor who are unfortunate victims. The Board of Directors consists of the Rev. Dr. C. Cuthbert Hall, the Rev. R. R. Meredith, J. O. Wilson, and the Rev. Charles H. Hall, Drs. Alexander J. C. Skene, Arthur Mathewson, John A. McCorkle, and Lewis S. Pilcher, and General C. T. Christensen, of this city, and Drs. T. Gaillard Thomas, Edward G. Jameway, Allan McLane Hamilton, and George F. Shrady, and Charles R. Miller, the Hon. Amos G. Hull, and J. N. Hallock, of New York.

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Clinical Notes and Comments.

The following extract from a lecture by Dr. Day at the *Washingtonian Home* on *Dipsomania* and *Œnomania* will be read with interest:

"Is there satisfactory proof of the existence of a disease characterized by distinctive symptoms or diagnoses, indicative of its nature, and distinguished from all others, called dipsomania or œnomania? If so, can it be cured?" were the questions asked in the beginning of the lecture, and in substance answered as follows:

"So important are these inquiries in their moral bearings that any physician venturing an opinion on them assumes a great responsibility. Nevertheless, I give an unhesitating affirmative answer to both questions.

"The term dipsomania is applied to certain writers on diseases of the mind to a peculiar form of insanity. The term is intended to designate that impulse towards the use of intoxicating liquors, which is known to rise suddenly in some persons at periods remote from each other, in contradistinction to that craving which in others is gradually established through the influence of habit, and which continues with unbroken and undisturbed regularity.

"The former are called periodical, and the latter constant drinkers.

"The impulse of the first has been considered a malady from the beginning, and I am forced to believe that the cravings of the latter are as much so.

"There are many exciting causes of intemperance besides constitutional predisposition and hereditary taint, some of which I will specify in the order in which I have traced them.

"Let it be understood that there are some men who are constitutionally protected against excessive drinking — men

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whose natural disposition holds their appetite in constant check. They are moderate in everything.

"Show me a man of lively and excitable disposition, with a vigorous imagination and generous impulse, who is fond of society and fashionable amusement, is the life of the social circle, can tell a good story and raise a laugh by his gayeties and gravities, and I will show you a man who, with all his manliness and pride of character and culture, is most liable to fall into the snares of intemperance.

"Second, an original constitutional nervous excitability predisposes to excessive indulgence. The operation of this cause was very apparent during the late civil war.

"Third, it is well-known to those who have studied the subject that there is a tendency in some occupations to create a desire for stimulants. Among those most liable are tailors, hatters, printers, shoemakers, bookbinders, jewelers, and most others whose occupations are sedentary.

"Fourth, cold and damp are also incentives to intemperance. The stomach is a quick, though short-sighted guide, and when the atmosphere is wet and chill, it issues orders for carbon, of which distilled liquors afford the largest supply.

"The owner of the stomach gratifies its longings, but does not reflect that, though the demand may be measurably proper at the outset, indulgence will rapidly turn it into a constant craving for stimulants when the necessity for them no longer exists.

"Fifth, there are unhealthy habits which are sure incentives to intemperance, such as over-working the brain, studying at unreasonable hours, and neglecting proper exercise, irregular meals, unpalatable food, in fact, any style of living that throws the system out of sorts.

"Sixth, any strong desire ungratified will do it, as will disturbed domestic relations, and numerous other causes which need not be mentioned.

"The most common enemy the human system has to encounter is alcohol in its various forms.

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"It would seem that the study of the art of hygiene would stay the progress of the enemy.

"The only solution of this strange phenomena is that man has as yet but little knowledge of the laws of life, that while knowledge has increased, the art of knowing ourselves, which is the most important of all, has not kept pace with other branches of human progress.

"Taking the word hygiene in its largest sense, it signifies rules for perfect culture of the body and mind. If our knowledge was exact, and our means of application adequate, we should see the human being in his perfect beauty."

THE INFLUENCE OF TOBACCO ON GASTRIC DIGESTION AND ACIDITY OF THE URINE.

DR. J. YDAN-POUCHKINE reports a number of experiments which he has made in this connection on seven healthy individuals who were not habituated to tobacco-smoking, and his results are reported in the *Bulletin Genéral de Thérapeutics.*

He first examined the effects of tobacco on the gastric juice and the motility of the stomach and on degree of absorption and on the acidity of the urine. For three days the author examined the gastric juice and motility of the stomach, noting the degree of motion of the stomach by salol, according to the process of Ewald and the rapidity of absorption with the iodide of potassium, according to the method of Zweifel, during a second period of three days each, in which the individual smoked, respectively, twenty-five cigarettes daily. For three days after this period the author continued the examination of their gastric juice in order to determine the after-effects of the tobacco. His conclusions are embraced in the following statements:

1. Tobacco increases the quantity of gastric juice, but diminishes its acidity.

2. The quantity of free hydrochloric acid of the gastric juice is diminished under the influence of tobacco.

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3. Proportionately to the decrease of the amount of hydrochloric acid there is an equal diminution of the digestive power of the gastric juice.

4. Tobacco likewise slows the action of the gastric ferments.

5. These modifications in the gastric juice produced by tobacco last for a period of several days.

6. As regards the motility of the stomach and its power of absorption, tobacco is stated to produce an increase of these functions.

7. Tobacco has no influence on the acidity of the urine.

THE following extract from a letter from DR. T. L. WRIGHT, of Bellefontaine, Ohio, is very suggestive:

"By the way, did it ever occur to you how tricky the public (manipulated by irresponsible and unprincipled politicians) has become with respect to alcoholic offenses against law and morality? The first step is to eliminate the saloon man from all part in the matter. This is done by simply requiring him to deposit money in advance to make good all the expenses that may arise from the shortcomings of drunkenness. This deposit is called *license.* It is expected and designed to meet the pecuniary obligations incurred in providing jails, poorhouses, lunatic asylums, etc., for the drunkard and his victims. This lets out the *seller;* and the public virtually engages to assume his responsibilities and to defend his rights in the continuance of his business.

"You will observe, in this transaction, no notice is taken of preserving the rights of society to a peaceful and quiet existence; no care is provided for the preservation of domestic happiness and welfare; no thought is given to the subject of the rights and feelings of children — their rights, namely, of a fair and equitable chance, both through precept and example, to become, as they grow into maturity, reputable men and women — in short, good citizens. The public totally ignores these vital points, and simply says, 'Pay my expenses

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and I will defend you in your calling, and the drunkard and his children may live and die in their misery without a single thought from me.'

"It is easy to say that the people are to blame in this matter. But in point of fact no legal blame can be fixed upon them. The people in this country are *sovereign*. It is a maxim of law that the 'king can do no wrong.' He reigns by the grace of God; and as to the people in their sovereign capacity why, *vox populi vox Dei*. It is true, in kingly countries the bad *advisers* of the king have their heads chopped off; but in this country the infamous politicians go free. The final result is, that the unhappy drunkard is held to a sole accountability for the crimes of alcohol, while those who thrive upon his woes (including the public) go unquestioned and unpunished.

"Of course all this is wrong; and wrong, however covered up, will disclose itself. The consequence is that we have the annual, biennial, and quadrennial political hurrahs, lies, and hypocritical pretenses amongst the baser politicians, all designed to throw dust in the eyes of the people until the pending election has passed off. Sometimes it is 'a party within a party,'—as though a fragment of a party could accomplish anything useful on a measure which of necessity requires the whole force of the whole party. Another time it is an imported and paid movement to adjust physical deformities—as of the brain and nervous system—by moral and religious appliances solely. Again it is the united and predetermined assertions of politicians and their organs that inebriety is a *crime*, and any man can abstain who cares to do so; and again it takes the form of the assertion that, although alcoholism is a *disease*, it is curable very readily and quickly, and safely; and whoever refuses this treatment has himself to blame—we, the public, being guiltless," etc., etc.

In 1886 $700,000,000 was spent for spirits. The amount of wages paid to working men that year was $947,000,000 and the liquor bill absorbed two-thirds of it.

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ALCOHOL AND LIFE INSURANCE.

In a recent lecture at Bombay on this topic by Dr. Alexander, he remarked as follows: "Life assurance was essentially a modern institution, the first English company having started in 1714. In the absence of reliable data for calculating the average mortality, the probable duration, and the expectation of life, the rates were very high. The first English life tables were Dr. Price's, called the Northampton Table; then about forty years later, the Carlisle Tables were drawn up by Mr. Milne. Since that time many other tables had been issued, giving exact information upon the preceding points for the general population, as well as for special profession and trades. The income of assurance societies must not merely suffice to discharge all claims as they arose, but secure a margin of profit; hence, it was their interest to ascertain all possible risks and provide accordingly. From their vast experience and exact information he asked for an answer to two questions of special concern to temperance workers: Did intemperance damage life? If so, could this damage be fairly estimated? Not to be tedious, he would select two men, Sir E. H. Sieveking and Dr. Pollock, both recognized authorities on this question. The former, in his manual upon the subject, laid down the general rule "that the habitual spirit-drinker, especially one who is found to take alcoholic drinks early in the day, ought to be declined altogether." The latter advised the rejection of a proposer whose daily habit it was to take stimulants three or four times in the twelve hours, and refused to give any place in life assurance to the dram drinker, the occasional drunkard, the man who had violent outbreaks of drunkenness at long intervals. The soundness of these opinions was founded on a wide experience, and on such statistics as Mr. Nelson's, who showed that from sixteen upwards the relative mortality of intemperate persons was more than three times higher than the general community; from twenty-one to thirty, more than five times; from thirty to fifty, more than four times.

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The returns for deaths really due to alcohol were not satisfactory, as the custom was rather to refer such deaths (not altogether incorrectly) to the local disease immediately preceding death. The records of disease bore ample testimony to the enhanced liability to nervous, digestive, and hepatic troubles among the intemperate. Abstainers had not yet received proper recognition for the undoubted superior value of their lives as proved by vital statistics. This arose, no doubt, partly from three causes,— the absence of data establishing the exact degree of superiority, the absence of any guarantee for lifelong abstinence, and the experience of reformed drunkards, whose lives might have sustained permanent damage already. But due recognition of the advantages of abstinence was only a question of time. The experience and practice of life assurance societies was decidedly adverse to the intemperate. On the second question a few typical cases would suffice. Nelson's tables showed how far the expectation of life or its probable duration was lowered by intemperance. Thus, for an intemperate person of twenty the expectation of life fell from over forty-four years to fifteen or sixteen. It was doubtful if any first-class office would accept such a risk on any terms whatever. Take another case of an intemperate man at thirty, whose expectation fell from over thirty-six to about fourteen years. Such a life, if accepted, would necessitate very high rating. According to Dr. Bristowe's tables, an addition of about thirty years would be required. The damage to the constitution might be expressed relatively to other diseases by comparing it with cases where a similar addition had been insisted on. The nearest actual parallels taken from the records of different offices were those of persons who had incipient phthisis or one who had recovered from a previous attack of insanity. Take the case of an intemperate man of forty. He had reduced his expectation from about twenty-nine to less than twelve years. The addition required by Bristowe's tables was about twenty-five years. Pollock's tables placed this man in the same category with those who had serious heart

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disease, or emphysematous lungs with complications. He concluded his remarks with the following quotation from Pollock: "A man with an injured valve in his heart, or a portion of his lung diseased, may outlive all calculations; but an habitual drinker to excess never."— *Temperance Record.*

THE AMERICAN DRINK BILL.

An interesting table was published in the August 16 issue of *Mida's Criterion*, a Chicago liquor paper. It is assumed that the figures are correct and official, though Commissioner Mason refused to furnish them to *The Voice* until the complete report of the Internal Revenue Department is published, some time next December.

The increase shown in the consumption of distilled and fermented liquors speaks eloquently for the rum victories last year. The estimate of $1,100,000,000 as the drink bill of the United States for 1889 will have to be increased to $1,200,000,000 for 1890. The 7,666,494 gallons increase in distilled spirits withdrawn for consumption, when reduced from the strength required by law (50 per cent. alcohol) to the ordinary retail strength (40 per cent. alcohol), make 9,199,793 gallons, which, retailed at $6 a gallon, would cost consumers $55,198,758. Then the 2,442,091 barrels increase of fermented liquors on which tax was paid, retailed at $20 a barrel, would amount to $48,841,820. That is, the people of the United States paid $104,040,613 more for liquor — omitting from consideration domestic wines and imported wines and liquors — for the fiscal year ended June 30, 1890, than the preceding fiscal year ended June 30, 1889.

An interesting fact with reference to the theory of taxing a harmful article out of existence, is that the only really harmless article in the list, oleomargarine, is the only article showing a decrease, while every harmful article shows a vigorous increase.

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REPORT OF THE HOMEWOOD RETREAT, GUELPH.

By Dr. Lett, Supt.

The Retreat has supplied a want in the province which is evidenced by the fact that, although it has been in operation only a few years, and its capacity is limited, a large number of afflicted have availed themselves of it, and the results of treatment have been highly satisfactory. Before the building was completed or ready for occupation, so many urgent applications for the care and treatment of inebriates were pressed upon the promoters that it was found necessary to admit this class of disease as well as those mentally afflicted, therefore special legislation was obtained whereby this could be accomplished and the proper control of the patient effected. Over one hundred and fifty inebriates, comprising those addicted to alcohol, opium, chloral, cocaine, and other drugs have had the advantages of the care and treatment to be obtained only in such an institution. The gratifying results obtained in these cases have more than demonstrated the utility of a haven of this nature, where patients can obtain the necessary rest, seclusion, and treatment. Many cures have been effected, nearly all have been much benefited, a few proved incurable or incapable of deriving any benefit.

In my annual report for 1888, I dilated somewhat upon the subject of "alcoholic inebriety," and emphasized the fact of its being a disease, requiring treatment based upon the same principles which govern medical men in the treatment of other diseases. Further experience only confirms the statements made at that time: it has nothing to retract, much to add. Alcohol, however, is only one of the many forms of inebriety with which we come in contact; the sensitive, unstable, and overworked nervous system with which so many of the community are afflicted, calls out continually for some stimulant, sedative, or anodyne to set it at rest,

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give it ease, or spur it on to the fulfillment of its daily task. For this purpose all sorts of drugs are resorted to, among the more prominent of which are opium, chloral, and cocaine. All of these cause the formation of "a habit" — more properly speaking a disease — though these by no means complete the list, which is almost inexhaustible. Numerous as were the drugs used for these purposes sometime ago, they have increased in an alarming rate of late years. Modern chemistry, which is daily developing and placing on the market new products of much value in the armamentum of the general practitioner, by such products is putting in the hands of the general public drugs which, being potent for good are also potent for evil, pleasant to take, relieving pain, care, anxiety, and sleeplessness.

These modern remedies, alluring and insidious as they are, quietly but surely make *veritable* slaves of their unfortunate victims, weaving shackles around them, holding them as it were in a vise, in which they can neither go forward nor yet retreat, and from which by their own unaided efforts they can never extricate themselves. The only hope left is death, to end a miserable existence; and when this does not come soon enough, suicide terminates the suffering. How cruel does this seem; and yet it is not more cruel than the unskillful efforts of well-meaning people, amateur doctors, or family physicians who undertake the management and treatment of these cases. The popular idea is acted on that this narcotic inebriety is only a vice, which the patient can at once abandon if he only wishes to do so, and this is also the opinion of at least ninety per cent. of the medical men of this province who are not themselves victims of drugs. Such ideas as to the nature and treatment of these maladies have been enunciated in the public press, as the following quotation from one of the leading Toronto dailies testifies. In speaking of the morphia habit, it says: "When the habit is once fairly formed the only hope is in absolute and immediate abstinence. But how is this to be accomplished? Let any one read De Quincey and think of something more difficult and more horrible still. Nothing but regular physical restraint will do."

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At the time the above appeared, I entered an earnest protest in the same journal against the barbarous treatment thus advocated. The person who penned these lines knew not whereof he wrote. Bad as he portrays the suffering to be, he can have no conception of the reality, otherwise he would not advise any one to set out on such a perilous journey. He has fallen into the popular error prevalent not only among the laity, but I am sorry to say, entertained and put into practice by many physicians, — "that total and immediate abstinence is the only hope." What a "slough of despond" is here? What utter *loss* of hope does this present to the mind of each and every opium taker? God help the unfortunate victim who is submitted to this "rack and thumb screw" line of treatment. It is cruel, inhuman, dangerous, unscientific, and unnecessary.

The only rational and humane plan of treating the opium habit is to rebuild the broken-down nervous system and at the same time gradually, yes, very gradually, withdraw the drug. The latter is best accomplished by taking a little from each dose, perhaps not more than the one-hundredth of a grain at a time; this must be done evenly and methodically, otherwise failure and suffering are inevitable. As the trained musician will tune his violin to concert pitch without difficulty, while the bungler will snap a string at half the strain, so it is in the management of these cases.

Under such a course at least seventy per cent. of opium habituates who are free from serious organic disease, can be safely and painlessly cured, but time is required to attain this end, and, *cæteris paribus* within certain limits, the more time that can be spent over it the less discomfiture will there be experienced.

Such was the protest I published nearly three years ago. The line of treatment herein outlined is that followed out in the Homewood Retreat. It is grateful and reassuring to the patients, imbues them with fresh hope, makes life worth living with something to look forward to, and is satisfactory in the ultimate result.

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REPORT OF CASES OF ALCOHOLISM.

Dr. Latimer reported that since he had assumed medical charge of the Baltimore city jail, he had treated during the period from April 11 to December 31, 1890, 958 cases of alcoholism, of which 40 suffered from acute excitement or *mania à potu.* The average duration of the mania in each case was 48 hours. All of these patients were admitted drunk; and most of them had had previous attacks of delirium tremens. Many of them were also addicted to the use of chloral and opium in addition to alcoholics. Nearly all of the total number had tremor, pains in the head and muscles, loss of appetite and frequently vomiting. The 40 who had mania were usually noisy. As to treatment, he would say that no stimulants were given in any case. The uniform prescription was 30 grs. of bromide of potassium every two hours in maniacal cases, and every three or four hours in other cases. In cases of noisy mania one-fourth grain of morphia sulphate was occasionally given hypodermically at bedtime. There were no fatal cases. All recovered. Not only were stimulants withheld, but the food was imperfectly adapted to their needs.

In view of these facts he was disposed to think that alcoholism was not due to a suspension of stimulants nor to the indisposition to take stimulants. Further, he did not regard the administration of stimulants as necessary to treatment. On the contrary, he was of the opinion that many cases of delirium tremens had a fatal issue in consequence of the administration of stimulants.

Dr. HURD said: "It has always been a matter of regret to alienists that a more careful distinction was not drawn by physicians between *mania à potu* and delirium tremens.

"In *mania à potu,* we have an attack of insanity due to the direct influence of the alcoholic indulgence upon the brain, producing a well-defined maniacal excitement.

"In delirium tremens, we have rather a disorder of the nervous system. In the latter instance, the disturbance seems to be due largely to the fact that the stomach becomes

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disordered; the patient is unable to take the accustomed amount of the alcoholic beverage into his system, and the nervous system feels the effect of its withdrawal; and tremblings, hallucinations of vision, and other nervous disturbances follow.

"In *mania à potu*, we have a simple maniacal excitement, due to alcoholic indulgence, a mental disturbance which differs in no respect from any other simple psychosis.

"If the distinctive characteristics of these two forms of nervous disease be borne in mind, their treatment will be indicated.

"In *mania à potu*, the patient should receive the same treatment as for any other form of maniacal excitement.

"In delirium tremens treatment should be addressed more to quieting the disturbance of the nervous system and preventing a patient doing himself or others harm, until the system becomes accustomed to the withdrawal of the alcoholic drink. Hence, in delirium tremens, the use of bromide of potassium to quiet the nervous disturbance and sustaining doses of some heart tonic, are especially beneficial"

Dr. FINNEY said: "Dr. Latimer's paper recalls to my mind a group of four or five cases occurring during my term of service as resident surgeon in the Massachusetts General Hospital, in which the symptoms of delirium tremens were not observed until several days after the patients had entered the wards. All were brought in intoxicated, and suffering from severe injuries. These cases, if I remember rightly, all pursued a more or less chronic course, the delirium lasting for some weeks, and was at times violent. The bromides and chloral were given in large doses without any very appreciable effect. Various other drugs were tried with a like result. Marked improvement was observed after the hypodermic administration of the sulphate of strychnine, and the tincture of nux vomica by the mouth, up to the physiological limit. The good effects of this treatment were noticeable after a day or two. All of the cases recovered, I believe, except one, which had other complications."

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AMERICAN MEDICAL TEMPERANCE ASSOCIATION.

This association was organized at Washington, May 7, 1891, in pursuance to a call by Dr. N. S. Davis of Chicago, Ill., inviting all persons interested to meet and confer on the need of such an association. Sixty-one physicians were enrolled as original members, and a constitution and by-laws adopted, a board of officers elected, and thus a new medical organization was auspiciously started.

The purpose and object of this new society is outlined in the following statement offered by Dr. Davis:

"The object of this association is to advance the practice of total abstinence in and through the medical profession, and to promote investigation as to the action of alcohol in health and disease, and it aims at being a bond of union among medical abstainers scattered all over our country. It admits as members regular medical practitioners who are practical abstainers from all alcoholic liquors as beverages. Members are not required to sign any pledge, but if such for any reason cease to become total abstainers it is expected that they will withdraw from the association. The liberty of members to prescribe alcohol is entirely uncontrolled."

From this it will be apparent that the central purpose of this society is to study and investigate the action of alcohol as both a beverage and medicine. The only qualification required is to be a regular medical practitioner and total abstainer from alcohol as a beverage. It will be apparent that the last qualification is more or less a scientific necessity for good work in this field. It is assumed rightly that all physicians interested in this problem of alcohol should approach it from the scientific side alone, unbiased by any personal considerations of custom or habit, political or religious belief, with no object other than to ascertain the facts concerning alcohol, irrespective of all possible conclusions. This is the spirit and purpose of the association.

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In England a similar association composed of members of the British Medical Society has been in existence many years. Their regular meeting occurs at the same time with the British Medical Association, and the value and usefulness of their work is recognized in all scientific circles. In this country a society called the Association for the Study and Cure of Inebriety has been in existence for twenty years. It is composed largely of specialists and persons engaged in treating inebriety as a disease. While it has done grand work, and built up a very suggestive literature through its JOURNAL OF INEBRIETY, it has not taken up the popular medical discussion of alcohol, which this new society proposes to do. These two societies will be closely allied in both work and purpose. One will have for its object the grouping and harmonizing the diverse theories of physicians concerning alcohol and its action, and the other the study of the inebriate and his maladies.

The Medical Temperance Association in the former work will be most heartily welcomed by all scientific men. The alcoholic problem has reached such proportions, and has become a subject of such intense interest in all political, social, and religious circles, as to demand scientific study.

Medical men in every community are called upon to determine the facts concerning alcohol, and the necessity for medical study and agreement concerning the general truths are apparent to every one. For this purpose the Medical Temperance Association invite the co-operation and aid of every physician, not for the propagation of any theory, but for the gathering and grouping of facts concerning the action of alcohol.

The association is entirely independent of any other object except the purely scientific question of alcohol. The executive committee has power to hold meetings in any part of the country where the medical interest seems to demand it. The regular annual meeting will be held at the same place and time of the American Medical Association.

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Papers and discussions will be presented at this time. While this association is the culmination of an idea long entertained by Dr. Davis, and held until medical sentiment would fully sustain it, it is apparent that it is an expression of medical advance, of the scientific spirit of the times, that would rise above the theories and precedents of the past for the facts concerning alcohol.

This association appeals to every physician, not as propagandists, but as scientists, for facts and clinical experience. It appeals to them as the only competent authority to determine the alcoholic problem. It appeals to the physician to guide and direct public sentiment, and to make this association the great central power for the study and propagation of the facts and laws relating to alcohol, and its use and abuse.

The following are the officers elected for the first year:

N. S. Davis, M.D., President, Chicago, Ill.

For Vice-Presidents, I. N. Quimby, M.D., Jersey City, N. J.; J. B. Whiting, M.D., Janesville, Wis.; F. E. Yoakum, M.D., Shreveport, La.; J. Taft, M.D., Cincinnati, Ohio.

Secretary, T. D. Crothers, M.D., Hartford, Conn.

Treasurer, G. W. Webster, M.D., Chicago, Ill.

For by-laws and constitution, and application for membership, address the Secretary, at Hartford, Conn.

In 1890 there had been an increased expenditure for alcohol of thirty-six millions over 1889. One-half of this was for beer, one-third for spirits, one-ninth for wine. The amount spent was seventeen dollars to each one of the population.

Idleness is the foster mother of drunkenness; industry is the bulwark of temperance. Let the mind of the penitent inebriate be kept occupied by attention to regular work, and the task of reformation will be shorn of half its difficulty.

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COMMENTS OF ENGLISH JOURNALS ON LEGISLATION FOR HABITUAL DRUNKARDS.

Referring to Lord Herschell's motion in the House of Lords for an inquiry into this subject, the *British Medical Journal* (June 13) says: "This inquiry cannot but do good. Our existing procedure is as injurious to the prisoner as it is inoperative in the cure or the prevention of intoxication. The brief detentions in prison under an abstinent *régime* practically only enable the narcomaniacal offender to pull himself together again, after the capacity for further intoxication has for the moment been lost. In this way the power to indulge in excess is regained, and the inebriate is confirmed in his fatal habit. Our present judicial system is, therefore, a great training school of inebriety. To these considerations there ought to be added the difficult problem of inebriate criminal responsibility, which has led to such remarkably contradictory verdicts and sentences, even in trials involving the highest penalty of the law. Of recent years there has been, by all engaged in the administration of justice, an increasing recognition of the diseased condition of many individuals accused of offenses committed either during or soon after an inebriate outbreak; and the frank acknowledgment of such a morbid state would be the key to a satisfactory solution of this intricate and important problem. Medical testimony has lately been strongly supported by discharged prisoners' aid societies, magistrates, and philanthropists interested in the reformation of criminals. We may, therefore, hope that the objections to the compulsory detention of habitual drunkards, which have hitherto in both houses of Parliament proved insurmountable, may, as the result of the forthcoming inquiry, be removed, and that such an amendment of the Inebriates Acts may be enacted as will render our legislation effectual in the cure of diseased inebriates, as well as in the reformation of inebriate criminals and in the marked diminution of inebriety."

The *Medical Press* says: "Lord Herschell, who elo-

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quently depicted the utter breakdown of the present system, was unfortunately not provided with any practical suggestions for an alternative method of dealing with inebriates. The remedy, however, so far as a remedy can be hoped for, is not difficult to find. It is to provide that, after a certain number of convictions for inebriety within a given period of time, the accused to be dealt with as suffering from a malady calling for special and appropriate treatment; in other words, that an order for sequestration follow (say) the third conviction within six months. The patient (for he or she ought to be viewed as such) would then be relegated to a special house of detention, or confined in wards set apart for the purpose in our large asylums for a specified period. It would be too much to hope that even this treatment will effect a cure in all cases, but, failing to make useful citizens, we shall at any rate prevent their being troublesome members of society.

The *Hospital Gazette* says: "The want of success which has, so far, attended all legislative attempts to cope with the evils of chronic inebriety has rendered the subject obnoxious even to those who view with pitying sympathy the fate of the myriad victims to the alcohol habit. The fact is, that hitherto legislation has been on altogether wrong lines. It is as unreasonable to punish inveterate drunkards by repeated imprisonment as it was to chain lunatics in filthy dungeons. We have lived to appreciate the folly and the cruelty of one, and we may ultimately learn to apprehend the inefficiency of the other. By and by public opinion will rally to the view that chronic intemperance is a malady calling for restraining rather than repressive treatment, and when that salutary change has come to pass the legislator will be authorized to substitute the 'home' for the prison. Surely, if it be admissible to send a person to prison a dozen times in one year for repeated infractions of the law against drunkenness, it cannot be harsh to place the prisoner under suitable treatment for that period after the first three convictions."— *Temperance Record.*

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ALCOHOLISM IN THE PROFESSION.

From time to time circumstances remind us that the disease of inebriety is not confined to the non-professional classes, and sad instances of its ravages occur even among those who have attained to the more serene altitudes of the profession, after the usual period of anxious expectation and waiting. It would seem that this period of restless inactivity conduces to indulgence in stimulants, if only to drown care and to enable the unoccupied energies to await the advent of better times. Unfortunately, when the long desired promotion arrives, the habit cannot always be thrown off, and the result is, sooner or later, a general break-down, culminating in death, sometimes by the pneumonia which picks off the physically *déclassé*, sometimes due to self-destruction, the result of melancholia. Medical men have peculiar facilities for voluntarily shuffling off this mortal coil without exciting attention, some charitable friend being usually at hand to draw the shroud of oblivion over the departed in the shape of a certificate of death, hence we hear little of these cases, except over the post-prandial cigar. Among general practitioners the same indulgence obtains as a relief to the worry and strain of practice, but we are glad to think that the number of its victims tends to decrease as temperance therapeutics advance. Medical men addicted to this habit are a source of danger to the community as well as to themselves, for they are apt to authorize the indiscriminate and injudicious use of alcohol among their patients. Alcohol, it has been observed, marks the limit of the practitioner's resources, and the public are gradually getting to see that when hard pushed for a remedy, then brandy or some other variety of alcohol is resorted to. Few men would wish to be judged by this scale, but it is this feeling, doubtless, that has favored the reaction against the routine use of alcohol that characterizes present-day therapeutics.— *Medical Press.*

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THE prognosis is unfavorable when inebriety is associated with organic disease of the heart or lungs, or when great impairment of mind, associated with paralysis, is present. Prolonged hot baths are of the utmost service in the treatment of inebriety. Among the therapeutic effects of these baths I would mention a diminution of the circulation and respiration, relaxation of the skin, alleviation of thirst, the introduction of a good deal of water into the system, an abundant discharge of limpid urine, a tendency to sleep, and a state of repose. It is most useful in acute and chronic inebriety. Milk heated almost to boiling is very valuable. It allays irritability of the stomach and craving for stimuli, and two glasses at night have a very sedative effect. If there are decided signs of cerebral congestion the occasional application of a leech behind the ear is good practice. If symptoms of softening of the brain appear they will often yield to the persevering use of the preparations of iron, phosphorus, zinc, and strychnia, with generous living. — *Mann.*

DIPSOMANIA or periodical inebriety is characterized by abnormal nervous excitability, conjoined with cerebral exhaustion, and the two indications which are urgent are, primarily, for increased rapidity and effectiveness as regards the process of nerve nutrition, and secondarily, to secure freedom from excitement, and diminution of nerve activity, and thereby to check the waste of nerve structure and of power. These indications we can fulfill by the judicious use of electricity and nerve tonics more certainly than by any other means, there being no other such combined sedative, restorative, and refreshant to the central nervous system. To give the brain the direct nutriment it needs in inebriety I have before stated can be accomplished by rest, cod liver oil, phosphorus, the phosphates, etc.

Primarily in the treatment we have shattered constitutions, and broken-down nervous systems to deal with. We have a

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disease eminently marked by weakening of the will-power, and seclusion from society, rest, judicious restraint, and enforced abstinence from all alcohol stimuli are cardinal points of treatment. I always let patients, applying to me for treatment, distinctly understand that a permanent recovery depends largely on allowing sufficient time for restoration of nerve-power, mental tone, and physical vigor, and I think, in most cases, six months is the least time necessary for a complete recuperation of the will-power. Dipsomania is a disease that requires the most perfect discipline, both moral and physical, if we expect a cure. Periodical insanities are notably difficult to cure so that there is no chance of a relapse, but we may reasonably expect an ultimate cure if there is no structural change in the brain which has resulted from the course of inebriety.

Dr. MATTISON in a recent paper remarks: "Until recent years it has been largely held that the use of opium, while often giving rise to well-marked, and, sometimes, grave functional disorder, it did not, like alcohol, cause organic disease. Of late, however, there has been a growing opinion that in a fairly large proportion of cases, its habitual use, especially in the form of morphia administered subcutaneously, will induce structural kidney change. In a recent paper by the writer, — 'The Renal Status of Opium Habitués,' read before the Philadelphia County Medical Society, October 22d — opinions pro and con were given, and, while it still may be deemed an open question, he has a very decided conviction that these changes occur. Granting this to be true, we have only one lesion as compared with several from alcohol, and as regards hereditary entailment there is almost no comparison whatever. The trend of all this in its bearing on the status of ex-alcohol or ex-opium takers, as touching the greater risk in assuring, is at once obvious, and, getting the attention its importance deserves, the ex-opium habitué can present a claim for life

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insurance backed by scientific pathological proof that, in our opinion, does, and should, entitle him to earlier and larger consideration. What about the probation period? The large risk of re-addiction is within the first year; the largest before the seventh month. After a twelve-month the danger decreases, and granting a healthy status along all lines — brain as well as brawn — we think the risk after three years is small. Of course, the non-risk is more ample, if the applicant be less than forty years old, if the addiction has been short, if physical rather than psychical factors stood in genetic relation, and if this physical factor were functional, that is to say, for instance, neuralgia, and not due to immovable growth or syphilitic poison, as against pain or insomnia — twin breeders of opium-taking — caused by structural change. . . . . If the facts and logic we have offered be sound, these conclusions seem warranted. Three years' entire abstention from opium, after not more than five years' addiction, all other conditions being favorable, entitle an applicant to insurance. There is no legal obstacle to a policy so conditioned as to assure both insurer and insured."

THE eminent Dr. Morris of Baltimore has for over a quarter of a century urged that inebriates were diseased, and should be treated as such. At a recent meeting of the medical society of that city, he suggested a plan of cure for the thousands of the drunkards called "bummers," who are committed and recommitted yearly to the city jail, and said that a sanitarium in which labor would be the principal element of reform and rehabilitation should be established for the care of these unfortunates, and that he thought the city should apply to the general government either for the gift or the purchase for a small sum of Fort Carroll, which would answer admirably for the purposes needed.

"Fort Carroll," the Doctor said, "is a perfectly useless piece of property, and has been for years an expense and care

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to the government. It would be necessary, in addition to this, for the city to purchase a few hundred acres of land in conjunction with the fort for a truck farm, which could be worked profitably for the patients. It would require but a few armed guards to prevent escapes, as is now the case at the House of Correction at Bridewell. Those 'patients' not engaged on the farm or other out-door work could be employed in mechanical industries that would not interfere or come into competition with the labor of honest mechanics outside of the 'sanitarium.'

"This plan, however," says Dr. Morris, "would be utterly useless unless it were coupled with the indeterminate sentence law, — a law which works so admirably in some of the States, notably in New York and Ohio. The indeterminate sentence law is not at all known and understood by our people. It is a probationary system, which provides for the discharge of the inmate as soon as he is fitted to go back to the community; in a word, when he is healed, cured, and of this the managers of the sanitarium or reformatory are to be the judges. When the man is committed by the court, he is not sentenced for any given time. He may remain one week, one month, one year, or even for life, if, in the judgment of the managers of the reformatory, he is still a 'leper.' A highly useful and beneficent feature in the indeterminate law is that of probation. If a person sentenced shows decided proofs of reformation, he is allowed to go out into the community on trial, being only required to report himself at stated times. Should he relapse, he is *again committed*, sent back to the reformatory without trial or expense to the city, inasmuch as he never had been discharged. The great necessity for this change in our criminal management will be apparent when we reflect that out of the 11,740 commitments last year to the city jail of Baltimore, 8,782 were committed for drunkenness and disorderly conduct. More than one-fourth of this number were habitual offenders, and spent from three to nine months of every year in the prison."

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DR. QUIMBY in a recent lecture said: "For over thirty years I have been in a position where, as a medical man, I could constantly observe the action or *modus operandi* of alcoholic stimulants upon the human body in health and in disease, and I do most solemnly affirm my belief that it is susceptible of demonstration that one-half, or one-third, at least, of all the diseases that afflict the human family are due directly or indirectly to the habit of the imbibition of alcoholic stimulants. I am sustained in this opinion by all unprejudiced medical men who have investigated the facts in reference to the relation that alcohol has to disease. The following clear conclusions were maintained, as representing the facts beyond question by scientists of to-day: 1st. *Alcoholic drinks* are not *true stimulants*, but narcotic irritants. Alcohol is not assimilated, nor is it tissue-making, therefore it is *not food.* 2d That alcoholic irritants (stimulants) do not aid digestion, are never useful adjuncts to the *food* of *persons in health*, and seldom to persons in disease. 3d. *As a remedy* it is only occasionally useful, and its place can readily be filled by other medicines quite as effective, or more so, with none of its dangers. 4th. *It should never be used by nursing mothers.* 5th. *It should never be used*, either in health or disease, by those who were once addicted to its use and had reformed, or by those who have a hereditary tendency or predisposition to its use. 6th. *It should never be used by minors*, or given *to children*, except in *rare cases*, and then not without *medical advice.* 7th. It neither preserves the health nor prevents disease. 8th. *The effect of alcohol* upon the *parents is transmitted* to the offspring. 9th. *Men will do mentally* and *physically* more labor and endure more hardships and exposures in all the departments of life *without*, than with, *the aid* of alcohol."

THE New Model Anatomical Manikin, published by Fowler & Wells Co. of New York city, is a half-size manikin with over a hundred views of the body. For natural color-

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ing and clearness of detail it is very valuable, and presents to the physician a perfect map of the anatomy of the body, that is as indispensable as any medical journal or text-book. Accompanying this is a well-printed volume of two hundred pages, called a Compend of Anatomy and Physiology, giving a clear description of all the parts of the body illustrated by the manikin. Together this is the most complete method of studying the body outside the dissecting-room that has been presented.

In England the increased consumption of spirits has risen over nine per cent. over last year's figures. In Scotland and Ireland seven and a half per cent. The ideal temperance workers are discouraged, and despite all their efforts the demand for spirits grows steadily.

Dr. Peabody says over 200,000 persons are dealing in beer and spirits. Over 1,000,000 persons are employed by these dealers. They contribute nothing to the wealth of the country. They withdraw so many persons from being producers.

The secretary of the State Board of Health of Iowa announces that he is convinced that habitual drunkenness constitutes palpable evidence of incompetencies, as the law reads, and therefore an inebriate physician should be deprived of his certificate entitling him to practice in that state.

A new law went into effect in Boston July 1st, regulating the punishment of inebriates. Persons arrested for intoxication could be released by the police captain the next morning, if it proves to be the first offense, and by signing a paper to that effect. Should he make a false statement, he

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is liable to arrest by warrant, and be tried for drunkenness. If he is an old offender he is tried and sentenced from one month to one year, and is not fined. These sentences may be remitted and he go out on probation. The police captain and magistrate are required to verify or disprove his statements as far as possible before final sentence, and all fines are abolished. Each case must serve a sentence in some public institution, as the magistrate may think best.

EVERY one who is in need of information on the subject of advertising will do well to obtain a copy of Geo. P. Rowell & Co.'s "Book for Advertisers," 368 pages, price one dollar. It is mailed, postage paid, on receipt of price, and contains a careful compilation from the American Newspaper Directory of all the best papers in the United States and Canada. It gives the circulation rating of every one and a good deal of information about rates and other matters pertaining to the business of advertising. Whoever has made himself acquainted with what may be learned from this book will admit that from its pages one may gather pretty much all the information that is needed to perfect an intelligent plan of advertising. It is not a complete newspaper directory. It is much better; for although it names barely one-third of the newspapers published, it does enumerate every one of the best and all that a general advertiser is likely to have occasion to use. Among the papers named in it the QUARTERLY JOURNAL OF INEBRIETY occupies the position to which its merits entitle it.

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permint. It is an improvement upon Chlorodyne, a patented preparation, widely dispensed as an anodyne and antispasmodic. Liquid Acid Phosphate, the action of which is to relieve symptoms of nervous exhaustion, depression, sleeplessness, melancholia, and increase the vitality. This action is so well recognized that the Acid Phosphate is in considerable demand as a stimulating beverage. Lime Juice and Pepsin is a grateful refrigerant and anti-scorbutic. It is a prophylactic against many disorders prevalent in the summer months.

FLORISANT, MO., April 21, 1891.

ANTIKAMNIA CHEMICAL COMPANY,

St. Louis, Mo.

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Very truly yours, G. C. EGGERS, JR., M.D.

The Oxford Retreat under the care of Dr. Cook, and *The Kensett on the Sound* at South Wilton, Conn., under Dr. Smith's management, are two very attractive private asylums with elegant surroundings and appointments, and conducted by expert scientists.

Warner's Bromo-Potassa is a very effective reliable remedy for all the various neuralgias which come from inebriety. As a summer remedy for insomnia and mental exhaustion it outranks any remedy known at present.

Fellows' Hypophosphites is one of the very few combinations that have retained their popularity in the medical public. Each year the sales are increasing, until now it has become the leading nerve tonic of the day.

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The Inebriates' Home at Fort Hamilton, under the care of Dr. Blanchard, has recently been greatly enlarged, and is still overcrowded with patients. No institution has done more real practical work with less publicity than this.

The Merritt's Typewriter is a simple compact machine of great value to all who have much correspondence.

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The Victor Safe and Lock Co. of Cincinnati, Ohio, will ship to any one a fine elegant safe for thirty dollars — equal to the best safes in the market. Send for a circular.

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THE HUMAN CONSTITUTION IN ITS RELATIONS WITH THE ALCOHOLIC CRAVE.

By T. L. WRIGHT, M.D., BELLEFONTAINE, OHIO.

> His life was gentle: and the elements
> So mix'd in him, that Nature might stand up
> And say to all the world, *This was a man!*
>
> — SHAKESPEARE.

IN the present inquiry the word *constitution* denotes that assemblage of essential properties necessary to the conception of personal identity in the human being.

It is obvious that the elements referred to most commonly represent traits of individuality in parentage. But parentage, even in its simplest form, is dual. There is a mingling of constituent qualities drawn from two sources at the very start. Both of these sources, also, are derivatives, and a very few generations backward will disclose the fountains of an impressive ancestry, almost beyond computation in number, as well as in modifying characteristics. The duality of proximate parentage is multiplied indefinitely by the immense number of dominant and constructive powers which enter into and make up the constitution of each parent.

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The component parts of the human constitution are, however, usually viewed as belonging to one or another of three groups. These comprehend the motor, the moral, and the intellectual capacities. But this simple division of the elements of human nature covers infinite diversities in their several constituents.

For they include not only particulars in qualities and kinds, but also modifications in grades, degrees, and shadings, to say nothing of contrasts and distinctions, likes and unlikes. They also include the infinitely varying relationships which the essential qualities entering into the human constitution, mutually assume towards each other, in different races, families, and individuals. They include, moreover, the ever-changing attitudes which the three great divisions of human nature — the body, the mind, and spirit — sustain towards one another in the multiform and inconstant experiences of life.

The endless peculiarities of the motor constitution that are to be perceived in each human being, as well as those of the moral and mental departments of man's nature, point to such an incredible number of essential traits in each and every individual that it is manifest no two persons can possess precisely the same constitution. No two individuals can appear, or move, or feel, or think exactly alike. Add to these causes of diversity in the natures of men the fact that the accidents, diseases, and customs of human existence modify old characteristics and impress new ones upon the race — then the impossibility of escaping the facts and responsibilities of well-defined personality becomes apparent.

It has been denied that the accidents and customs of living really impress upon posterity new and corresponding constitutional traits. It is claimed, for example, that the rite of circumcision would then exercise a physical impression upon the races of people who practice it. That there is anything in this rite to sensibly impress the constitutions of men cannot justly be claimed. It is too inconsiderable to produce profound results. To expect that a peculiar effect

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should become apparent in the physical element of humanity when there was no lasting constitutional disturbance in ancestry to produce it would be unreasonable. It is only when the elements of the constitution are clearly operative and dominant in ancestry that they are capable of displaying their power for good or evil in reproduction. There can be no inheritance unless there is, pre-existing, something positive and substantial to inherit.

But inebriety may reproduce itself through heredity. Profound and fundamental constitutional changes are likely to become established when the use of alcohol is persisted in for a considerable length of time. A sensible evidence of this may be seen in the *alcoholic countenance*, indicating permanent morbid alterations within the brain. This characteristic is perceptible even when the man is sober. There is a scowl upon the brows which are drawn into a line, the eyes looking coldly and fiercely from beneath, while the mouth, most noticeable of all the features, is obstinately and strongly closed, its corners being rigidly drawn downward, the cheeks falling low and giving to the jaw and chin a determined and pitiless look. There is partial paralysis of one set of muscles and a corresponding stiffness of another set. The lineaments of the countenance are forbidding and stony — not mobile. Look, for example, upon the likenesses of certain drunkards who have occupied very high positions in public life. The muscular system in general also partakes of similar characteristics, a greater or less difficulty of movement being prevalent throughout.

The moral nature suffers still more severely, for it is exceedingly sensitive, readily impressed, and, therefore, easily wrecked. The chronic inebriate is saved from criminal conduct, very largely by automatism, habit, and imitation.

The mental constitution likewise exhibits analogous conditions of brain injury. These hurts are often permanently established — constitutional — and when so, they are brought under the laws of heredity.

When inebriety is merely a disease in itself, it is a proper

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subject for treatment. The plan of nature is best. She is always conservative, always patient. Under her influence the inebriate family strain will either die out and there end, or in milder cases, the diseased tendencies may be gradually toned down and in time they may be eliminated from the constitution.

Cultivate and strengthen the natural relationship of the physical, moral, and intellectual capacities, thus contributing to the establishment of a stable and well-balanced constitution. In this way the evil and disturbing elements of the inebriate diathesis may be gradually but favorably impressed.

I say *impressed*, for it is apparent that a *perfect* constitution is an ideality. It is never encountered in actual life. The true constitution of humanity is either too lax or too strained. Take an average and we have simply a mental picture — never a reality.

But in the infinite variety of human constitutions there must arise many instances where individuals are born with natures very much below the average. Constitutions exceedingly imperfect appear, that are the direct offsprings of some serious ancestral defect. Such congenital incompleteness may show itself in physical malformations and in moral or mental susceptibilities. It is needless to say that serious imperfections of structure are necessarily attended by inadequacies of function. This rule is applicable equally in deficiencies of the grosser bodily organs and the finer and sensitive structures of the nerve centers.

To illustrate: There are, perhaps, few more constant physical disorders in the habitual inebriate than those of the heart. It has been pointed out that excessive alcoholic indulgence has a direct tendency to injure the walls and valves of the heart and also to stretch and derange the caliber of blood-vessels. But what was the condition of the heart before the drinking habit was formed? And who knows how much a congenitally defective heart has had to do in driving its possessor to drink? Hereditary heart affections are by no means uncommon. They are more prevalent, in truth,

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than is generally imagined. Many cases of heart imperfection have passed through the world undetected and unknown even to those who suffered from them. *Post-mortems* and sudden deaths fully establish that fact.

A person laboring under heart disease has of necessity a mind and disposition of great instability and inquietude. At one time, when circumstances are propitious and general health prevails, the circulation is propelled freely and naturally throughout the regions of the brain. Life is cheerful. Mind is active and acute and the feelings are elate. Again, the same heart acts badly, possibly the liver or kidneys fail in function. At any rate, the circulation is weak, intermittent, insufficient. The brain and nerve centers suffer in common with the system at large. The mind is slow, stupid, melancholy. Irritability of temper, sullen anger, universal distress prevail and assume control.

And now, either by accident or design, the alcoholic potion is taken. Instantly, a pleasing and most welcome relief is experienced. The undefined, but wide-spread and nagging pain and discomfort, are assuaged by the anæsthetic effects of the lethal draught. The circulation for the time being resumes its activity. The sluggish current of dark and stale blood is forced onward through the brain and it is replaced by a supply of fresh blood of superior vitality. Care takes wings and flies away, while the mind finds solace in soothing dreams and unsubstantial fancies and the *dolce far niente* of recent alcoholism.

The man with heart disease is a man of *moods*, just as the dipsomaniac is a man of moods, and sometimes the cause of them is in the two persons one and the same. It is heart disease. An important fact now comes into view. Heart disease is one of the most common forms of heredity. It is not essential either that in inebriety from heart troubles, ancestry should owe heart disease to the alcoholic habit. It may be congenital from causes that are apart from alcoholism — from a family strain of rheumatism, for example.

It is apparent, therefore, that the so-called "appetite" for

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strong drink may come from widely differing sources and may possess various qualities. The fundamental character of this appetite or "thirst" may evidently be such as to preclude the idea that it may be overcome by the mere ingestion of certain medicinal antidotes or incompatibles.

But it is indubitable that inebriety may become hereditary through certain qualities and forces inherent in its own nature. The damage inflicted by alcohol upon a given person may be so profound and extensive as materially to impress and direct the movements of the whole constitution. It is in cases of this kind that inebriety may clearly display its own hereditary power and character.

Parents who drink to alleviate, though unconsciously, the distress arising from deranged heart functions, will, quite likely, be followed by sons who will also drink in consequence of heart disease. Here, it is the cardiac affection, not the inebriety, that is strictly hereditary. Alcohol is always a fraud and a traitor, and it is true that while it relieves the pressing symptoms and present agony of deranged heart function, it really intensifies the pathological conditions which underlie the whole matter. For it is certain that while alcohol may be taken from simple frivolousness or from worse motives, its tendency is to produce heart imperfections, *de novo*, and there is no reason to doubt the opinion that they, too, may become constitutionally impressive and hereditary.

Physical defects, other than those of the heart, also may tend to the development of dipsomaniacal excesses. Serious imperfections of the lungs sometimes lead to habitual inebriety. Lung incompleteness is liable to be attended by severe difficulties in the respiratory, as well as circulatory functions, and these may be alleviated by the alcoholic influence.

Hereditary brain diseases are very common and they, too, may invite the intervention of alcoholic anæsthesia. The profound neurasthenia, symptomatized by forms of megrim and neuralgia, is usually congenital, and it is not infre-

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quently a source of inebriety, only, alas, to the final increment and firmer establishment of the original constitutional malady.

It will be observed that in these examples of severe functional derangements, alcohol is not used as an article of superfluity, not as something unnecessary and therefore inexcusable, but it is taken for a rational purpose, namely, to relieve a present and harassing lesion of function.

These considerations and various others of a like nature may possibly induce the ultra-scrupulous moralist to moderate his judgment somewhat when a brother stumbles. They may, perchance, lead certain persons noted for legal acumen to abate the stubbornness of their assumptions about the inexcusable criminal responsibility of drunkenness. There are many inebriates who do not indulge in alcoholic drinks with a view to their effects upon the mind and disposition and who indeed do not clearly know what those effects will be.

Respecting the proportion of dipsomaniacs whose neurotic propensity descends to posterity in the same form, I think it is a subject worthy of inquiry whether inebriates who owe their besetment to obvious congenital defects do not nearly always inherit the dipsomaniacal constitution; and also whether dipsomaniacs from alcoholic perversity alone do not mainly furnish the examples where the descent is in other neurotic forms, such as insanity, epilepsy, chorea, criminality, hysteria, and the like.

It is wise to consider the origin as well as the features of dipsomania in the scheme of treatment. The importance of various appliances differ in separate cases. In some instances, moral influences occupy a prominent place in treatment; in others, intellectual instruction is imperative, while again, hygienic agents and medicines are necessary. And yet so many elements enter into the inebriate constitution that a certain mingling of all these means of treatment is required to obtain the best results. It is proper to understand that *time* is an essential element in caring for inebriety. Se-

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clusion in a well-ordered and well-equipped retreat is also of great advantage and is sometimes indispensable in the preliminary treatment of severe cases. The patient has a great deal to learn by precept, example, and experience if he would be well and would stay well.

I would sound a note of warning to him who has divested himself of the shackles of inebriety. A great danger will be sure to arise. There will come a time when there will intrude a desire to *test the reality of the cure.* The feeling of strength will be great and "why not show to self and to the whole world that I am competent to stand up as others do?" There is but one course of safety — one sure rule. You now can abstain *altogether*, but you can *never* drink in moderation. The first cup will disable you, will take possession of you, and no longer master of yourself, you will swiftly go to destruction. Offenses of this kind cause many people to decry the efficacy of sanitary institutions for inebriates. Men expect too much and think "treatment" should accomplish results that are matters of personality exclusively, such as the exercise of reasonable fortitude, some application of the returning capacity of will and a recognition of the qualities of a growing sense of honor. There are certain conditions in all diseases, wherein "the patient must minister to himself."

In the Swiss Canton of St. Gaul, a law passed in 1890 provides that habitual drunkards may be placed under care in an inebriate asylum, for periods varying from nine to eighteen months, either on the ground of voluntary submission, or by direction of the local authority (District Council). Proceedings may be initiated by a relation or guardian of the drunkard, by any public body, or on the sole responsibility of the council, but they must be justified by a certificate from the medical officer of health, that such seclusion is necessary for the cure of the patient. If his personal property is insufficient to meet the expense, the public funds are to be applied, not only for his own maintenance, but, if necessary, for the support of his family during his enforced absence.

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CLIMATIC INFLUENCES AS RELATED TO INEBRIETY.*

By E. P. Thwing, M.D., Brooklyn, N. Y.

Climatology is a fruitful study. It is vitally related to agriculture, sanitary science, engineering, mechanical arts; also to psychology, physiology, and medicine. It is an old study. This department of physics received attention from Hippocrates and Theophrastus, centuries before Christ. They noticed the instabilities of the elements and the influence they had on the nutritive and nervous functions of organic life. They treated these atmospheric phenomena with more sobriety of discussion than did Chaldean scholars before them, who — careful in studying the heavens — failed to see the kinship of solar energy and terrestrial magnetism. Not till within the last eighty years, however, have electric disturbances, variations of temperature, diurnal currents, tidal forces, and other dynamics of climate, been so fully investigated as to found a science of meteorology, that is, a science of weather and climate. It was not known to these ancient sages that the earth is an engine, the sun a furnace, the tropics a boiler, and the poles a condenser.

From 1817, when Humboldt's work on Isothermal Lines was published, to the present time, physicists have widened the field, perfected their appliances, and so have enriched the science of climatology, each in his special line of observation. For example, Professor Draper of New York shows how climate has changed not only complexion, but cranial development. Austere conditions furnish a ruder, baser type, while a more genial clime produces a finer grade of skulls, with brains to match, inasmuch as social and intellectual develop-

* Read at the Medical Congress, Staten Island, July 15, 1891.

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ment depends upon exemption from the exacting demands of either extreme of climate. Uniformity of climate tends to create homogeneity of national character. This means immobility, as among Asiatic races, unless higher factors modify. As science provides improved means of locomotion, man's migratory tastes are quickened, and his intellectual life. Climate itself may be modified by civilization, as when vast forests are removed along the water-sheds of a continent, or inland seas created, as is proposed in the case of extensive deserts. This fact shows that Montesquieu's epigram is to be taken with some allowance, "the first of all empires is the empire of climate." Professor Dunbar of Aberdeen University contrasts the munificence of nature in one zone, and the temptations to indolence and self-indulgence thus created, with the rigor of other climes where her gifts are doled out with a frugal hand, and personal effort stimulated. Milton and Young among the poets, and Descartes among the philosophers, have hinted at the modifying influence of climate on character. Referring to William of Orange, De Foe says that he was "too great a genius for so damp a soil." Disraeli, however, reckons these theories among the imbecilities of great men, and makes education and legislation so potent as to practically exclude physical factors entirely, which ground is contradicted by history and experience.

What temperament is to a man, that is, the angle at which he looks at things, climate may be said to be to a country. In one sense, temperament is one's fate and climate is a country's fate. The slant of solar rays, varying from the vertical in equatorial regions to the angle which makes Arctic frost at the poles, imposes a destiny on the races of men. I have realized this in a recent journey of 30,000 miles to and from India by the way of China and Japan. The immobility and social petrifaction, the torpid and tepid life of the average Asiatic is, in part, the product of physical factors. Inebriety is not common there as with us. As Canon Farrar says, we found India sober and made it drunken, we have belted the globe with drunkenness, sending from English and American

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ports cargoes of that which has cursed our own lands to ruin the tribes of Africa and Asia.

Before western civilization gained a foothold, Buddhism was a repressive influence, and so was Islam with its law of total abstinence. Conditions are rapidly changing. Potent as are climate and religious agencies, appetite and example are equally so. Man is fond of stimulants, the world over. The tinder only needs the torch. When a Moslem falls a victim to the liquor brought by Christian nations, you may hear it said: "He has left Mahomet and gone over to *Jesus!*" Thus is Christianity blackened and the sacred name of its founder defiled by associating the rum traffic with the religion of our land. Heathen compare their system to our own, and not to our advantage.

The United States has been called by Dr. Beard "The Intemperate Belt." Here is the birthplace of the disease Inebriety, as distinct from the habit of drunkenness. Here this malady has developed sooner and more rapidly than elsewhere. Here it was first studied. Here inebriate asylums were first established. Here total abstinence societies started, for it was seen that here, at last, no half-way treatment availed. No moderate use of liquors is wise where climatic influences have so intensified the feverish rush of life to which racial, social, and political factors contribute. First, notice the extremes of thermal changes in our American climate as related to this heightened nerve sensibility; and secondly, the influence of the peculiarly dry, electric quality of our atmosphere upon the nervous system of our people.

1. The great extreme in thermal changes. I have seen in New England a range of 125°, from 25° below zero to 100° above, in the shade. The year's record at Minnesota reads from 39° below to 99° above, a range of 138°. Even within twenty-four hours, and in balmy regions like Florida, the glass has shown a leap from torrid heat to frosty chill.

No wonder, then, that the greatest fear of some is the atmosphere! They dread to face alike Arctic rigor or Tropic fire, and get in the habit of staying indoors even in exquisite

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weather of June and October. Rooms are made small, with double windows and list on the doors. In winter a roaring fire is in the cellar; another in the grate. The difference between this hot, dry, devitalized air within and the wintry air without is sometimes 80°, on an average 60°, while the difference of temperature inside and outside an English home is 20°. The relation of this to the nervousness of the people is apparent.

2. The uniform brightness of American skies favors evaporation. The Yankee is not plump and ruddy like his moist, solid, British brother, but lean, angular, wiry, with a dry, electrical skin. He lights the gas with his fingers, and foretells the coming storm by his neuralgic bones. Hourly observations were made for five years with Capt. Catlin, U. S. A., a sufferer from traumatic neuralgia, in care of Dr. Mitchell. The relation of these prognostic pains to barometic depression and to the earth's magnetism was certified beyond doubt, and was reported to the National Academy of Science, 1879. Even animals in the Sacramento Valley and on the Pacific coast are unusually irritable while the north desert winds are blowing, and while electricity, seeking equilibrium, is going to and from the earth. Fruits, foliage, and grass towards the wind shrivel. Jets of lightning appear on the rocks and sometimes on one's walking stick. The heart beats faster in New York than in London, and faster still in the Western altitudes. "I can do more here," said Newman Hall of London; "I feel it to my finger's end." Climate helps to put a tremendous strain on heart and brain. Talmage truly says, "We are born in a hurry, live in a hurry, die in a hurry, and are driven to Greenwood on a trot!" The perpetual play of this accelerated nervous energy is exhausting. As a result, a neurotic diathesis is created, and men and women on the verge of physical bankruptcy cannot afford to add the stimulus of intoxicants.

Climatologists speak strongly, as when Dr. Coan says that the Gulf Stream gave Europe her civilization, and the occlusion of the Pacific, shutting out the cold of Arctic seas,

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made Polynesian character what it is; and Buckle, in his "History of Civilization," who says that climatic influences form a definite part of the anatomy of national life, yet their conclusions are justified by facts.

The limit allowed for this paper is reached, but a closing suggestion as to its bearing upon the subject of crime may be added.

In the study of criminal anthropology we now have a new school, of which Dr. Lombroso, Professor of Medical Jurisprudence, is leader, which makes crime to be the accumulated result of the criminal's physical and mental constitution and environment. He and his colleagues have abundant materials in Italy, for there are ten times as many assassinations there as in France. They have been very minute and patient in studying the material and mental increments of crime. Nothing is overlooked. Eyes, ears, hands, feet, internal and external organs are examined. Abnormalities of vision, taste, and other perceptions are noted. Assymmetries of person are detected by anthropometric examination.

But what concerns us most just now is this: while the electrical experiments of Du Bois Raymond prove a dull tactile sensibility in the average criminal, they reveal the fact that "he is much more sensitive to meteorological influences." This may be supposed to be true to a marked degree in the case of inebriates. I would therefore commend the subject of climatology, as related to the neorotic diathesis, to the studious attention of the members of this congress.

THE Commissioners of the Lancashire Lunatic Asylums state in their annual report just issued, that "although drunkards are not generally regarded as insane, it is a question whether the habitual tippler might not with advantage be considered an irresponsible being, and treated as such." They point to the fact that in not a few cases the only cause that can be detected for a patient's insanity is the intemperance of one or both parents.

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ADDRESS ON ALCOHOL.

By N. S. Davis, M.D.,

President American Medical Temperance Association at Staten Island, July 17, 1891.

Members of the medical profession and fellow citizens:

We have assembled here and now for the purpose of considering one of the most important subjects that can engage the attention of an American citizen. From the most accurate sources of information available, I learn that, during the year 1890, more than 80,000,000 gallons of distilled spirits, 40,000,000 gallons of wine, and 800,000,000 gallons of malt liquor, were consumed in the United States, making a total of fermented liquors and distilled spirits of 920,000,000 gallons. From the same sources, it is ascertained that about 10,000,000 gallons of distilled spirits were consumed in the arts, manufactures, and medicine during the same year, leaving the amount consumed for drinking purposes 910,000,000 gallons, at a cost to the consumer of more than $800,000,000, or about $13 per head for the entire population. During the same year, 1890, according to a carefully prepared statement in the *London Times*, the amount of distilled spirits consumed in Great Britain was 38,324,000 gallons; of wines, 30,000,000; and of beer, 1,124,956,000 gallons, making a total of 1,193,298,000 gallons at a cost to the consumers of more than $697,000,000. If we deduct from the total of distilled spirits the same ratio as is used in the arts, manufactures, etc., in this country, it will leave the amount paid for these drinks $632,000,000, or more than $16 per head for the entire population of that country.

If we add to the $800,000,000 paid in our country annually, directly for intoxicating drinks, the value of the time lost by its effects on those who drink it, in stopping

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their work, in inducing sickness, and in increasing both crime and pauperism, we shall have an aggregate of indirect cost of much more than another $800,000,000, or a total bill resulting from the use of intoxicating drinks in this country of more than $1,600,000,000 in a single year.

And what does the consumer get for all this enormous pecuniary expenditure? Does it bring a single item of clothing for himself, his wife, or his children? Does it take the place of food so that he or his family needs less provisions, or can get board at less price per day or week? Does it strengthen him in body and mind, and thereby enable him to do more work and do it better? Does it promote his physical health, sharpen his intellect, and elevate his morals? Is there an intelligent man or woman in this audience, or anywhere in this country, who can conscientiously answer any of these questions in the affirmative? Certainly not.

Why does an intelligent and free people continue to spend such enormous sums of money for drinks that so plainly bring nothing but evil in return? I answer: First, because of the erroneous education of the greater portion of the people in regard to the true nature and effects of alcoholic drinks when taken into the human system; and, second, because of their power to pervert the sensibility of the brain and nervous system, and thereby develop the most fascinating and persistent mental delusions.

A large majority of the inhabitants of every country receive the most influential and enduring part of their education, not in the schoolroom nor from books, but from the opinions, maxims, and practices that they hear and see from infancy to adult age in the family, on the street, and in the social circles of the neighborhood. From a very early period in the history of these drinks, before chemistry had separated and revealed the nature of the active ingredient that pervades them all, the people, judging only from the sensations and actions induced by their use, were very generally persuaded to regard them as stimulating, warming, soothing, and restorative. Consequently, they speedily found their way into

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almost every household in Christendom, and were ever ready to relieve the baby's colic, to enable the mother to give more milk, to relieve the father's weariness, and to prevent the boys and girls from "taking colds" when exposed to wet or cold weather; and, of course, doctors, priests, and people, all united in calling them tonics, stimulants, and restoratives for the body and soothing exhilarants for the mind. And it is true that these same designations and the ideas conveyed by them are still dominant in the family circles, the highways, and the newspapers of this and other countries. Even the great majority of medical men still contribute their full share to the support and perpetuation of these very general and destructive popular errors, by habitually using the same language and sanctioning the same practices regarding them.

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By all chemists and other scientific men, it is classed as an active poison capable of speedily destroying life when taken in sufficient doses; and if taken pure or undiluted, it destroys the vitality of the tissues with which it comes in contact as readily as creosote or pure carbolic acid.

The most varied and painstaking experiments of chemists and physiologists, both in this country and Europe, have shown conclusively that the presence of alcohol in the blood diminishes the amount of oxygen taken up through the air-cells of the lungs, retards the molecular or metabolic changes of both nutrition and waste throughout the whole system, and diminishes the sensibility and action of the nervous structures in direct proportion to the quantity of the alcohol present. By its strong affinity for water and albumen, with which it readily unites in all proportions, it so alters the hemaglobin of the blood as to lessen its power to take the oxygen from the air-cells of the lungs and carry it as oxy-hemaglobin to all the tissues of the body; and by the same affinity it retards all atomic or molecular changes in the muscular, secretory, and nervous structures; and in the same ratio, it diminishes the elimination of carbon-dioxide, urea, phosphates, heat and nerve force. In other words, its presence diminishes all the physical phenomena of life.

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These direct effects of alcohol, as demonstrated by rigid experimental inquiries, are in perfect harmony with the phenomena presented by their use in all the grades and conditions of human society. The diminution of nerve sensibility, developed in proportion to the quantity of alcohol taken, may be seen in all stages, from simple exemption from all feeling of fatigue, pain, and sense of weight, as exhibited by ease, buoyancy, hilarity, etc., to that of complete unconsciousness and loss of muscular power. It is this anæsthetic effect of the alcohol that has led to all the popular errors and contradictory uses which have proved so destructive to human health and happiness. It has long been one of the noted paradoxes of human action that the same individual would resort to the use of the same alcoholic drink to warm him in winter, to protect him from the heat in summer, to strengthen him when weak or weary, and to soothe and cheer him when afflicted in body or mind. From the facts already stated in regard to the action of alcohol on the constituents of the blood and tissues, all this is easily explained. The alcoholic drink does not relieve the individual from cold by increasing his temperature, nor from heat by cooling him, nor from weakness and exhaustion by nourishing his tissues, nor yet from affliction by increasing his nerve force, but simply by diminishing the sensibility of the brain and nerves, and thereby lessening his consciousness of impressions of all kinds, whether from heat or cold, weariness or pain. In other words, the alcohol by its presence does not in any degree lessen the effects of the evils to which he is exposed, but directly diminishes his consciousness of their existence, and thereby impairs his judgment concerning the degree of their effects upon him.

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And yet the same errors and delusions concerning their use in the treatment of diseases and accidents are entertained and daily acted upon by a large majority of medical men as are entertained by the non-professional part of the public.

Throughout the greater part of our medical literature,

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they are represented as stimulating and restorative, capable of increasing the force and efficiency of the circulation, and of conserving the normal living tissues by diminishing their waste; and hence they are the first to be resorted to in all cases of sudden exhaustion, faintness, or shock, the last to be given to the dying, and the most constant remedies through the most important and protracted acute general diseases. Indeed, it is this position and practice of the profession that constitutes at the present time the strongest influence in support of all the popular though erroneous and destructive drinking customs of the people. The same anæsthetic properties of the alcohol that render the laboring man less conscious of the cold or heat or weariness, also render the sick man less conscious of suffering, either mental or physical, and thereby deceive both him and his physician by the appearance temporarily of more comfort. But if administered during the progress of fevers or acute general diseases, while it thus quiets the patient's restlessness and lessens his consciousness of suffering, it also directly diminishes the vaso-motor and excito-motor nerve force with slight reduction of temperature, and steadily diminishes both the tissue metabolism and excretory products, thereby favoring the retention in the system of both the specific causes of disease and the natural excretory materials that should have been eliminated through the skin, lungs, kidneys, and other glandular organs. Although the immediate effect of the remedy is thus to give the patient an appearance of more comfort, the continued dulling or anæsthetic effect on the nervous centers, the diminished oxygenation of the blood, and the continued retention of morbific and excretory products, all serve to protract the disease, increase molecular degeneration, and add to the number of fatal results.

I am well aware that the foregoing views, founded on the results of numerous and varied researches and well-known physiological laws, and corroborated by a wide clinical experience, are in direct conflict with the very generally accepted doctrine that alcohol is a cardiac tonic, capable of increasing the force and efficiency of the circulation, and

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therefore of great value in the treatment of the lower grades of general fevers. But there have been many generally accepted doctrines in the history of medicine that have proved fallacious. And the more recent experiments of Prof. Martin, Sidney Ringer, and Sainsbury, Reichert, H. C. Wood, and others, have as clearly demonstrated that the presence of alcohol in the blood as certainly diminishes the sensibility of the vaso-motor and cardiac nerves in proportion to its quantity until the heart stops paralyzed, as that two and two make four.

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But without further taxing your patience with the details of investigations and statistical results, I will answer three of the questions proposed for discussion by this assembly, by saying first, that alcohol is a poison, or in the words of Dr. Joseph Frank Payne, Vice-President of the Pathological Society of London, that "the action of alcohol on tissue or tissue elements is three-fold: (1) as a functional poison; (2) as a tissue poison or destructive; (3) as a checker of oxidation." Second, that alcohol is in no proper sense a food, either direct or indirect. And third, there are no proper or necessary uses of alcohol as a medicine, except by the chemist and pharmacist, except in the manufacture and preparation of drugs. It is true that a physician can make the anæsthetic properties of alcohol available for the temporary relief of pain and the induction of sleep, but it is equally true that he has many other remedies more efficient for those purposes, and less objectionable than the alcohol; consequently, the use of the latter is neither necessary nor proper.

A MAN who had been intoxicated every week for ten years, and was in a state of delirium all the time, shot a bartender and set fire to the saloon, without any words or altercation. The jury found him guilty and he was hung. The *post mortem* revealed a splinter of bone that had been pressing on the brain for over ten years, dating from a blow on the head, a short time before he began to drink.

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INEBRIETY NOTES, No. III.

By S. V. Clevenger, M.D., Chicago.

That drunkenness should be studied to be understood would appear to the ordinary mind preposterous, but the ordinary mind always has an off-hand opinion upon every subject, however complex, without ever having necessarily given that subject a moment's consideration.

The universality and commonness of inebriety render it so familiar that a proposition to study it would raise a smile and the suspicion of soft-headedness. Yet, there is such a thing as a sign being too large to read except at a distance; towns may not be seen for the houses, and the extent of a forest may not be known to the one who has seen many of its trees. Inebriety problems merit the attention of the ablest students of sociology and pathology, because alcoholism is responsible for more disease, insanity, and crime than any other single cause. Hysterical, political, or other efforts to suppress the "vice" of intemperance effect a few transient reforms, but the rabidity of well-meaning ignorance is as apt to do great harm in other than the intended direction.

Even though some healthy tissue may have to be sacrificed in a surgical operation, it would be better to have the operation performed by a surgeon rather than a butcher. In attacking the social cancer drunkenness, butchers heretofore blindly brandished their cleavers. Often well-intentioned, good, honest, and justly angry butchers—at home, in the pulpit, in editorial rooms, on the rostrum, unable to separate the sin from the sinner, destroying the patient rather than the disorder, exorcising the demon by ostracizing the possessed.

All diseases have, as such, passed through the same

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history. Primitive races abandoned their sick as accursed; finally they resorted to beating the ailment out of the afflicted. The American Indian scares the devil out of disease with noises, the Chinaman by burning rice paper prayers, and the "civilized" indulge in the same species of nonsense in many cases. The latter has for a few decades back kindly changed the responsibility of disease in general from Satan to the Deity, and is beginning to look upon insanity as amenable in many cases to decent treatment; but as for intemperance, its time for rational care is just beginning. At a Chicago political institution, that has been occaionally ventilated by the newspapers, a clerical gentleman gives "lectures" to the inmates upon the folly of their ways. Preraphælite pictures of the stomach, in various stages of alcoholic pickling, are exhibited, and the pathology of inebriety is emotionally discoursed upon by one who is absolutely ignorant of the subject. But public opinion counts for something in suppressing the evil, however ignorantly that opinion may be grounded. The dying out of the old custom of New Year's calling has made a change for the better; the amusing part of this instance being the popular mistaking of cause and effect. When intoxicants were no longer given away, callers dropped off until the custom of calling at all fell into disuse.

Among the many features of alcoholism the following have thrust themselves upon my attention:

After prolonged use of liquor, abstinence, sometimes, is followed by acute melancholia in which the delusions of that psychosis are commingled with some that are peculiar to alcoholic insanity. This depressed state seems to be owing to exhaustion of the system habituated to alcoholic sustenance, and not yet readjusted to the assimilation of proper food.

A demented condition, also, more or less profound, may set in from the same causes. A well-known stock-yard's millionaire of Chicago, had, up to his sixtieth year, guzzled fusil oil in all its disguises as ethyl alcohol compounds, and

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a sharper, shrewder skinflint was hard to find; but he abandoned his drinking utterly and completely, and during the past three or four years has gradually become incapable of attending to business; presenting the apathy, memory loss, and other characteristics, of what was formerly known as "primary mental deterioration," but which Voisin established as "atheromatous insanity"; the blood vessel destruction found, *post mortem*, associated with the disease justifying the designation. While this mental malady is often independent of alcoholic habits, its appearance, as apparently connected with the stoppage of drinking, is worth noting. In those who indulge many years and then quit drinking, the alteration in behavior is quite observable; they are certainly quieter, calmer, and while, doubtless, far better off than when stimulating, the general tone is below what it would have been had they not drank at all; meddling with fire must be at the expense of some scars. While atheromatous insanity may occur in the temperate, a condition like it could readily be conceived as consequent upon abstinence after long addiction, or the pathological condition itself may be induced by the alcohol, and persist, whether it is or is not taken after the condition is instituted.

The hyperæmic state necessarily alters the cerebral arteries in various ways, causing endarteritis, leucocytic exudation, neoplastic organization, and capillary extravasations into the cerebral tissues comparable to the rosacea observable in drunkards' cheeks and noses.

In my autopsies of the alcoholic insane at the Cook County Asylum, I invaribly noticed a rusty discoloration of the dura mater along the course of the superior longitudinal sinus, and other evidences of old inflammatory conditions, such as adhesions of the membranes and cerebral tissue in this region. The vascular and meningeal alterations varied in degree according to the age of the patient, and of course where frailty of blood vessel organization existed congenitally, then there was all the more likelihood of danger from potations.

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The finer mental co-ordinations in any one are maintained by persistent effort; being the latest faculties acquired, and their tenure being so dependent upon full brain integrity, it is plain that the moral nature, when possessed, has been superimposed upon the less easily destroyed brute nature, through less definite and strong histological arrangements acquired and inherited, demanding for their enjoyment and exercise the clearest kind of a brain activity. Vitiated blood quickly blots out these better but feebler functions, just as general exhaustion is felt first and mostly in our weakest joints. So the moral nature, which is merely the higher grade of intelligence, may depart, when the seat of intellect in general is weakened by any cause, such as senility, drinking, insanity, arrest of development, traumatism, and some diseases.

When certain pathological adjustments involving imperfect compensations occur, such as thickened arterial walls which resist the increased flow of blood, then a new plane of mental operation is established, which, if disturbed by change of habits, as by withdrawal of the customary greater heart impulse, is but partly recompensated by the purer blood supply.

Practically the adjacent cerebral tissue must suffer from anæmia to a greater or less extent, and where before the blood was driven through disarranged avenues, it now makes its way feebly and in places not at all. Nor is this all; the sclerosed and otherwise changed tissue becomes a more prominent hindrance to function when the artificial nutrition and circulation is cut off.

The poor fool of a drunkard is thus "damned if he does and damned if he don't" continue, but the short pull up is infinitely less risky than the continuance.

The hallucinations of the tremens patient have been accounted for by Krafft-Ebing as due to the optic scotoma and circulatory cortical interference by the poison, suggesting unpleasant objects such as snakes.

A little philosophizing upon this point would not be amiss,

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for important psychological processes are revealed in that connection.

Wundt says that the cerebral tissue acts in sleep somewhat as the retina does when tired, affording complementary impressions, in the latter case of colors, and in the former dreams. But my records show that however this analogy may be justified in making our dreams differ from the events that have transpired while awake, it does not convert unpleasant or painful impressions of the day into pleasant ones when asleep. Quite the reverse; pleasant events are usually followed by either dreamless sleep or by indifferent or pleasant dreams, and unpleasant happenings make uncomfortable dreams, though in changed terms, *to less intellectual conceptions*, markedly. For example, if some complicated abstruse subject — as a matter of research — has worried the student, unsolved, he is apt to dream of sinking steamboats, tedious journeying, hill climbing, and obstructed traveling. Very true, the starving man dreams of feasting, but it must not be forgotten that the memory of past feasting is uppermost and constant in the starving man's waking thoughts, and he dreams of realizing what his animal nature so strongly desires; so the waking and sleeping thoughts are continued in the same general direction and the complementary rule does not operate. I believe that it does so in certain instances, however, and may be called Wundt's law of a certain class of dreams induced by minor unimportant routine events, such as a former janitor of the Pennsylvania University is said to have experienced. When asked if his duties in the dissecting room did not give him unpleasant dreams, he said that, on the contrary, he usually dreamed of flower gardens and pretty romping children. Troubles and difficulties tinge dreams, as we all experience, but what are humdrum events to us — even though not such to others — may render Wundt's law effective.

The alcoholic disarrangement of the physical functions is shared by the mind, and hypochondria, melancholia, remorse, unpleasant retrospection, and horrible anticipation are the

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waking penalties of the sot, and unless drunken slumber is almost comatose, the tossings and mutterings of the poor wretch sufficiently indicate that in his slumbers he is no less unhappy. If the soaking culminates in "jim jams," practically the higher mentality is asleep, and drunken dreams afflict him while he is apparently awake. Some insane who have recovered recall their insane thoughts as hideous dreams. The intellectual life is to all intents and purposes really asleep in tremens and insanity, in varying degrees, according to the education and capacity of the person to resist insane tendencies and to correct mental misconceptions, a very interesting point in this connection being that an ignorant person is less able to resist hallucinations than one who is educated in physiological matters.

Then another physiological factor steps into this matter of hallucinations or illusions: The limner, with a few strokes of a crayon, will cause you to recall animals or other objects distinctly, and you are apt to imagine, unless given to close analysis, that details innumerable have been filled into the picture, when such is far from being the case.

The artist knows the value of "suggestion," and the sanest person can be thus deceived in any of his senses, through the workings of the "law of association," which supplies through the imagination what is missing, and human testimony is thus so apt to be fallible. An odor may recall vividly an event of long past years and account for many "mysterious" workings of the mind, mysterious just as anything else is, when unfathomed, not necessarily because it is unfathomable.

I recollect suddenly stopping in a walk one day, wondering at the suddenness and intensity of a certain remembrance of a very pleasant boyhood scene, in which every little sight and sound were recalled.

Determined, if possible, to find the cause of this revival of what had passed out of my recollection for perhaps twenty years or more, I looked about and found it in the fragrance of some prairie flowers and freshly cut hay.

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It is the unconscious picturing of the whole from a part, the suggestion, the association, that when properly studied clears up many an otherwise inexplicable mental process, and we may profitably apply a knowledge of it to hallucinations and illusions in health and disease, for they exist in both, with the difference that in the latter they are less apt to be recognized as such.

You feel a fly on your hand, while looking at your hand and knowing that no fly is there. That is a hallucination or an illusion (depending upon its cause), which you have mentally corrected. If abstracted when feeling this impression, your thoughts engaged elsewhere, you may have difficulty in recollecting immediately after whether the fly really were there or not, and when the mind is so dimmed by disease as to be unable to correct these subjectively originated impressions, the insane condition dominates. A chain of *muscæ* floating in the vision, which would cause a sane person to rub his eyes or his spectacles, may recall a snake or other image to the whisky-debased mind; and the reason why a snake may be thus suggested, rather than something pleasanter, or harmless, is because the general mental and bodily discomfort suggests and is on the lookout for disagreeable things.

There are times when "everything goes wrong" with you, the heavens look black, friends seem distant, duns instead of remittances arrive, and you fully expect any sort of a calamity to happen next, when in reality there may be little, if any, basis for all this experience.

Again, little happy events may enable you to laugh at real troubles, which, occurring at any other time, would weigh you down. The relativity of things is thus apparent. If in our ordinary moods we are such automata, what can be expected of brains through which filth is circulating, kidneys, livers, stomachs, and nervous systems disarranged, and the entire organism on the lookout for additional horrors?

The drinker experiences multitudes of deranged sensations; pain, cramps, numbness, aches, empty gnawing feeling

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in his vitals, burnings in his stomach, crawlings, creepings, tinglings, twitchings, and other paræsthesias, as well as "swell head," anæsthesias, etc., and the material causes underlying these deranged sensations are circulatory disturbances, hyperæmias mainly, with a *tendency* to neuritis, which may culminate in the real disorder. So long as either education, or preservation of enough mind to account for these aberrant feelings exists, the sufferer realizes that his system is merely out of order, and he rationally explains his condition; but let ignorance, or its equivalent, a mental impairment, accompany these, and forthwith, according to the previous means of accounting for things in general enjoyed by the patient, he will assign erroneous causes for their origin, such as magnetism, electricity, hypnotism, diabolical or other persecution. In former days, witchcraft and the devil were blamed, but as the people grew more familiar with scientific workings, electricity, etc., was substituted. This is true of all insane delusions and hallucinations.

The delusion of being persecuted is the insane endeavor to account for the horrible subjective feelings, just as the animal is terrorized by unpleasant things it cannot understand; and, for the time being, the lunatic is reduced to unintelligent ways of accounting for things, as much so as when undergoing a nightmare. Every degree of these usually unsystematized persecutory delusions may be found, sometimes alternating with sane moments, and from feeble suspicion to positive conviction of the entire world being against the patient.

From tinnitus aurium to hallucinations of hearing is but a step, and the threats, obscenity, and commands to violence, render those who suffer from auditory hallucinations extremely dangerous to themselves and others. It is also a matter of grave prognosis.

The perverted tastes and smell of the alcoholic insane lead them to cast about for insane ways to account for such perversions, and, guided by their persecutory delusions, they most generally claim that their food is poisoned, and

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this often leads to the refusal of nourishment altogether, or it is taken only under most ridiculous safeguards; of course they often, for this reason, cannot be induced to take medicine, and forcing them to do so merely confirms their ideas of your murderous intentions.

One of the most common delusions of alcoholic insanity is that the wife is unfaithful. To account for this, we must remember that drunkards are too often brutal to their wives, and frequently seem to invent excuses to abuse them, and the wife is the most convenient person upon whom accusations can be loaded, being, as a rule, defenseless against her husband, her natural protector. The nagging and reproaches unwisely administered by her awaken resentment and mean ways of getting even, and savage methods of revenge are resorted to all too frequently by the ordinary tippler, who at heart really does not believe that his wife deserves the abuse he gives her. Now, since these cowardly and contemptible suggestions arise in the drunkard's mind at a time when he can realize their injustice, it is natural that when he is still further demoralized he is not able to discriminate between the real and the fancied unfaithfulness, and from hinting it to believing in it, as part of the general persecution he is undergoing, is simply an easy gradation, according as liquor has more and more brutalized him. But this alone will not account for the singular fact that marital infidelity delusions are characteristic of alcoholic insanity, occurring oftener than in other forms of mental alienation.

An attempt has been made to explain the delusions of alcoholics that their sexual organs were mutilated or absent, by assuming alcoholic fatty degeneration of the seminal vesicles and central nervous disorganization produced anæsthesia of the parts. Doubtless numbness of these organs is common, with sensory disturbances of other parts, and this suggests such delusions, and may also lead the alcoholic insane mind to account to himself for his aversion for his wife, or for her resisting his approaches. It

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is more than likely that the fitful satyriasis, that oftener occurs than complete sexual loss, and the incessant repulsions give rise to the marital infidelity delusion.

Some one else is preferred to him, he imagines, and I have known alcoholics to have hallucinations of having witnessed gross amours between their spouses and men carried on in public, or under impossible circumstances. At the same time, the alcoholic may content himself with mere wordy abuse of his wife for this, or, as has happened in innumerable instances, he may murder her in some atrocious manner, the peculiarly horrible method of the wife-killing being a matter of medico-legal importance, as raising a suspicion of the cause of insanity.

Well worth noting is the extraordinary tolerance of some individuals, as compared with the intolerance of others. One person, most often female, is flushed and made otherwise very uncomfortable by the smallest indulgence, when, on the other hand, a well-known railway magnate of this city, it is credibly stated, has taken over a quart of raw whisky daily for thirty years, and, while his moral nature never was probably very exalted, he was never known to be intoxicated or unfit for business by reason of his indulgence.

An old gentleman of seventy years complained of fainting attacks, especially in the mornings. He said that the bed would rise up and hit him in the back of the head when he attempted to get up on awakening. His heart was quite feeble and there was general anæmia. He had been strictly temperate all of his life, and objected strongly to any tampering with liquor under any pretext. In addition to prescribing tonics I advised him to resort to some light wine as an absolute necessity, assuring him that there was little danger of his carrying the habit to extremes.

He reluctantly took the wine and experienced the greatest possible benefit from it, and he now uses it judiciously as an indispensable medicine. In addition to such cardiac stimulant action, we frequently find phthisical patients benefited by alcohol, and in two instances I know of most extraor-

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dinary tolerance existing in pulmonary tuberculosis. Both the patients have had hæmorrhages for fifteen years or more; the strongest liquor affects them "no more than drinking so much water would," as they both claim. Yet I think that gastric derangements are the penalties they suffer for over-indulgence; while lung tissue is conserved, the heart's action maintained, and general strength is kept up by the stimulant, which apparently does no harm to them mentally.

Taking a bird's-eye view, at this stage of our notes, we can sum up alcohol as at once the enemy and friend of man; ships have gone down at sea and millions have been drowned in water, and yet we continue to use hydraulic machines and can safely assuage thirst. If just the right application of alcohol could be made in all cases, it would cease to be dangerous; but instead of wishing its destruction or advocating its freer use, under the circumstances, the masses should be educated to an appreciation of its exact nature, and that all are not alike in susceptibility. There are those who indulge in moderation without harm to them, either through their constitutional tolerance or because disease enables them to do so; others cannot stand even moderate drinking without harm to themselves. Some are rapidly destroyed by tampering with it, others are gradually wrecked during a long lifetime. Some over-indulge, and the brunt falls upon other organs than the brain, leaving their minds apparently clear (though inevitably some degradation must follow); others are warned away by gastritis, and a fortunate warning it is; still others are propelled into greater business activity, for a time at least, and acquire cash at the expense of their health finally. There are those who cannot touch it through idiosyncracy, and those who will not from principle, or because it is repulsive by association. Manifold are the questions involved, and when we come to examine into the weakness of one neighbor and the strength of another; the peril that alcohol places one in, and the good it does to another; the frailty of flesh and blood in general,

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and what a struggle it is to evolve civilization out of savagery; how thinly the latter is veneered with the former; the temptations that beset us, and that many a grand mind and noble life have been destroyed by an accidentally encountered drinking environment, and particularly when we know that we are individually what our morphological structure enables us to be, and that character, position, ability, everything, depends upon mere circumstance, that we are exempt from some troubles by good fortune, which was denied others; that a fall, a fever, a blow on the head, a grief, may change any nature in the world for the worse; we then experience some of the mental broadening which all correct knowledge gives; we grow more merciful, more charitable, less inclined to rant against the sins of our neighbors, less pharasaical, and more anxious to help, as we would desire to be helped under similar circumstances. In fact, science compels charity, knowledge of the truth makes us merciful, where ignorant, self-sufficient railings at "sin" drive drunkards to deeper degradation. Intolerance and bigotry are the result of ignorance, and all three have done as much harm in the world, if not more, than intemperance.

THE second report of the Institution for the Treatment of Inebriates at Ellikon-on-Thur, Germany, which has recently been issued, shows that, during the year 1890, 55 persons were under treatment. Of 36 discharged in the course of the year, 17 were found after strict inquiry to have remained total abstainers up to the date of the report, 11 had continued temperate, though not abstaining entirely, 6 had relapsed, and 2 had become insane. Of 10 patients discharged in 1889, 7 had remained total abstainers up to date, and 3 had relapsed.

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EFFECT OF MODERATE USE OF ALCOHOLIC DRINKS ON LONGEVITY.*

By Dr. M. L. Holbrook,

Editor of the Herald of Health.

In discussing the question of the moderate use of alcoholic beverages and their effect on longevity, one labors under some difficulties, because as yet we have no very accurate definition of what their moderate use is, and besides this, if we had a clear definition, we have not as yet sufficient statistics and facts to make out the case as I should like to present it, that is, so strong as to admit of no controversy. We define the word moderate to be temperate, within bounds, or not extreme. With this definition, I suppose any use of alcoholic drinks short of intoxication would be its moderate use; anything beyond this immoderate, or extreme. Now to the question, Does such a use shorten life or not? In the first place, let me consider what are the conditions of long life and why is it that many persons live to be very old.

They are these:

1. A good constitution, by which is meant one that will stand the wear and tear of daily existence without breaking. The body will be evenly but not excessively developed. In all very old people, the evidence goes to show that the heart has originally been sound, the lungs have performed their functions faithfully, digestion has been good and the nervous system, especially the one controlling functional, bodily activities, well balanced and healthful. These are the general conditions. If we examine the constitution, however, from the standpoint of a biologist, or microscopically, we shall find that those with strong ones have a liberal supply

* A paper read before the American Medical Temperance Association at Prohibition Park, New York, July 16th.

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of living matter, or protoplasm. Living matter is the base on which the vigor, healthfulness, and length of life have their foundation. If there is a large supply, the possessor will withstand the strains of life, the competitions that he must meet; will ward off disease and death, when with a small supply except with great economy he would not. Under the microscope the white blood corpuscles, the pus globules of an inflamed surface or part, or any epithelium that can be studied before it has lost its structure or been worn out will be seen to be loaded down with brilliant living matter. The granules are coarse and crowd on each other and the recticulum is also large and strong.

There is as much difference between a living cell or corpuscles in a strong and a weak man as between a house well built with good material and a slender, poorly made one. Sometimes a person who seems healthy and well to the external eye shows, when a fragment or a bit of blood is examined with the lens of 500 diameter power, defects on which we may predict a short life, unless all his resources are husbanded in the most economical manner. Now what are the effects of alcohol, moderately used, on these conditions. Let us take the organs of the body first. In a healthy man the heart beats normally. It needs no whip or spur to urge it on. Alcohol acts on it as a whip or spur and makes it beat faster than it should. Reasoning on general principles we are justified in saying that all abnormal action of the heart, even if it is only slightly abnormal, kept up year after year must injure this important organ and shorten life. Experience justified this conclusion.

2. What is the effect on the lungs and their function? The office of these organs is first to take up from the air oxygen, without which we cannot live at all, and second, to separate from the blood carbon-dioxide, and other products of transformation constantly being produced in the processes going on in the body, all of which products, excepting water, are poisonous and some of them so in a high degree, and both of these functions of the lungs are lessened even by the

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moderate use of alcohol; that is, less oxygen is taken in and less carbon-dioxide thrown off. Laboratory experiments show this conclusively. Are we justified in saying this cannot in even a small degree injure the constitution, which ends in shortening life? I think not, but even if it could be shown that life is not shortened we all know it diminishes its fullness. We live in proportion as we breathe, that is take on oxygen and throw off the waste off bodily activity, and anything that lessens this makes life less full, less complete, less perfect, if not less in length, which is if anything worse. We now and then meet persons who have lived long and used alcohol more or less extensively. We generally, though perhaps not always, find they have accomplished little in the world. If there are exceptions they can no doubt be explained.

If we turn to the nervous system we find still another illustration supporting our belief that alcohol shortens life, even if not used to intoxication. The healthy, well-trained brain is a fountain of strength to its owner. The man whose brain is stimulated by alcohol never thinks quite straight. Hope is magnified and caution diminished. He often rushes into dangers that ends life abruptly or does deeds that disgrace him for ever. Can we for a moment believe that the substitution of abnormal for normal neural processes, incorrect for correct thinking, does not injure the constitution and diminish life both in quantity and quality? I will not for a moment say that all total abstainers think clearly and correctly. Many of them are more or less hazy on some subjects and make extravagant statements more the result of incorrect training and imperfect knowledge, but if they do these things sober, what would they not do when even slightly under the influence of alcohol?

Dr. Richardson says:

"I had learned purely by experimental observation that, in its actions on the living body, this chemical substance, alcohol, deranges the constitution of the blood; unduly excites the heart and respiration; paralyses the minute blood-

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vessels; increases and decreases, according to the degree of its application, the functions of the digestive organs, of the liver and of the kidneys; disturbs the regularity of nervous action; lowers the animal temperature, and lessens the muscular power. Such, independently of any prejudice of party, or influence of sentiment, are the unanswerable teaching of the sternest of all evidences, the evidence of experiment, of natural fact revealed to man by experimental testing of natural phenomena. . . . It begins by destroying, it ends by destruction, and it implants organic changes which progress independently of its presence even in those who are not born."

The general effect of alcohol on the protoplasm is very serious. The alcohol taken into the stomach is absorbed into the blood and traverses the entire system. In the brain, the alcohol goes into the brain cells together with the nutriment designed for them. Abnormal action is set up at once. We know this from the fact that the thinking is abnormal. Protoplasm is a very precious material, the most costly of anything we can name. It gradually wastes away when age comes on, and waste is less than repair. It gradually clogs up as we grow old with the debris of the system. A brain cell of a young man of twenty is bright and clear, but as age comes on much of its brightness is gone. It is tattered and torn, so to say, and darkened by the sediment left in it which it cannot throw off. In the moderate drinker it is tattered much sooner. Alcohol is inimical to it, causes it to waste unduly. We ought to care for the living matter of our bodies as for this most precious treasure, for with its departure life departs. If by any manner of living we could preserve it from wasting beyond the power of the nutritive system to repair it, and if we could keep it pure and clean, life would be prolonged indefinitely, some have claimed forever, accidents and diseases excepted.

Now how does all this harmonize with experience? Does moderate drinking *actually* shorten life, and can it be proved

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by stubborn facts, or are we only guessing at it, theorizing, as some will say? Let us see.

As I have already said, statistics are somewhat meagre, but it is not necessary always to wait for statistics to get at a truth. The true prophet will see a truth long before statistics and facts have been tabulated to prove it. It is only those of less power of foresight and discrimination that need the crutch of statistics to give them assurance and support; still so far as support goes they support us in every way.

1. Insurance companies, I think, universally prefer, other things being equal, abstainers to even moderate drinkers, and some societies have classes for such at less cost.

2. In an English society, which has been in existence for over a quarter of a century, the death rate per 1,000 annually among the abstainers is only a little over one-half that among the non-abstainers, who are usually moderate drinkers.

Dr. Alexander, in a lecture on life insurance in Bombay, makes the following statement:

"Abstainers have not yet received proper recognition for the undoubted superior value of their lives as proved by vital statistics. This arises, no doubt, partly from three causes, — the absence of data establishing the exact degree of superiority, the absence of any guarantee for lifelong abstinence, and the experience of reformed drunkards, whose lives might have sustained permanent damage already. But due recognition of the advantages of abstinence was only a question of time. The experience and practice of life-assurance societies was decidedly adverse to the intemperate."

3. I have myself had since 1864 a very large correspondence and acquaintance with persons who have lived to be very old. It would tire you to go into details, but it may surprise some doubting ones to learn that among them the number of total abstainers who have lived from ninety to 100 years and some over 100 is very much larger than the number of moderate drinkers. Indeed, I know only a very few of the latter who have passed the ninetieth year in good working condi-

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tion. I can to-day count up a dozen total abstainers from eighty-five to ninety-five, some still doing good work and only one at ninety still hale and strong, who, while he was never drunk in his life, drinks a little every day.

Horace Greeley once said, "That some men live long in spite of moderate drinking no more proves the practice safe and healthful than the fact that some soldiers who fought through all Napoleon's wars are still alive proves fighting a vocation conducive to longevity."

SOME STARTLING STATISTICS.

The thirty-fifth report of the Reformatory and Refuge Union states that in Great Britain and Ireland 145,000 persons are every year committed to prison as drunkards, of whom 112,000 are men and the rest women.

An English paper, from statistics taken from the press of the United Kingdom, reports the records of murders of women by inebriated husbands, since January 1, 1889, to January 1, 1891, to be 3,004.

In a late debate in the German Reichstag it was stated that there are at present 11,000 persons in hospitals and insane asylums who are suffering from delirium tremens.

The police report states that the licensed houses in London, England, number 14,085, giving one to every 413 of the population.

Of the 30,000 criminals in German prisons, 14,000 were arrested for crimes committed under the influence of intoxicating drinks.

During the seven months of 1891 ending August 1st, California shipped to eastern cities 6,094,616 gallons of wine being an increase of 1,240,120 gallons over the shipments during the same period in 1890.

A CANADA Medical Temperance Association was formed last month at Montreal on the same basis as the American Medical Temperance Association.

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RECEPTION TO DR. DAY.

The President and Board of Directors of the Washingtonian Home at Boston gave Dr. Day a reception at the Home in honor of his seventieth birthday, Oct. 15, 1891.

Our association, recognizing the importance of the occasion, decided to hold a public meeting at the same time and place, and make the event memorable by a wider recognition of Dr. Day and his lifelong work.

The reception was held early in the evening, and was a notable gathering of distinguished people and personal friends of Dr. Day from all parts of the country. The public meeting in the chapel was organized by Mr. S. B. Stebbins, the President of the Home, and after prayer by Rev. J. W. Day, Dr. Mason of Brooklyn, New York, gave the opening address as follows:

We come to offer our congratulations to Dr. Day that he has lived to see some results of his lifelong work. As a rule, pioneers seldom see the promised land; they must go on in faith that another generation after them will reap the results of their work. The period included in Dr. Day's life has been noted for the most extraordinary changes of facts, theories, and conceptions of inebriety and the inebriate.

For ages the inebriate was regarded only from the moral side, and even down to the present time was fined and imprisoned as a willful, voluntary criminal.

In the middle ages the death penalty was applied to his so-called "criminal offense." The Church, after vain endeavors to reform the inebriate, excommunicated him, including him in its wholesale denunciation against drunkenness.

And while Church and State thus dealt with the inebriate, the "science of medicine" stood aloof, as though medicine had nothing to do with such a, (as was then supposed,) "moral evil."

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And so excommunicated, legally condemned, socially ostracized, the friendless inebriate drifted as a waif on the tide of humanity, — a sort of flotsam and jetsam, branded with the legend, "no drunkard can inherit the kingdom of heaven," and enrolled by the law among its criminal classes; despised and dishonored, he sank beneath the tide, and the waters closed over him; his nearest of kin gave a sigh of relief, and, if there were any regrets, they were swallowed up in the universal congratulations at his departure.

Science claimed another endorsement of her favorite theory, "The survival of the fittest," while humanity alone bowed her head in silent pity. The ecclesiastical doctors and the legal doctors had failed to recognize the disease which they proposed to treat; they had simply made a mistakened diagnosis, and applied the most violent of supposed remedial measures. And so the years rolled on into decades, and the decades into centuries, and until within a comparatively short time, the regulation treatment of the inebriate has been practically the same, varied only by time and circumstance. But a change was destined to appear; in the latter part of the last century an American physician, Dr. Benjamin Rush of Philadelphia, made the assertion that *medical science* held out that relief for the inebriate which Church and State had failed to give him after centuries of fair trial; he asserted that inebriety was a *disease*, and not only thus pointed out the character of inebriety and the standpoint from which it should properly be considered, but also the method of its treatment. Not in prisons, it was not a *crime*,— not in reformatories, it was not a *mere moral delinquency*,— but in hospitals, it was a *disease*.

It is very evident that society, as represented in Church and State, did not take kindly to this suggestion of Dr. Rush, for we do not hear of any grand movement for the relief of the inebriate through the aid of medical science; and so half a century passed. Dr. Rush had long since lain down his armor, and completed his life work, and it would

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seem as if the axiom he uttered had passed from the minds of men.

It may have been there was too much to occupy the public mind in the earlier history of the young Republic, but the seed was simply dormant.

> "Often do the spirits
> Of great events stride on before the events,
> And in to-day already walks to-morrow."

Within the latter half of the present century, we see the germ of truth expanding into that which it should eventually become, in the mind of another American physician, whose name was to be as prominently connected with the history and medical treatment of inebriety as that of Dr. Rush. We refer to the late Dr. J. Edward Turner of Wilton, Conn., the founder of the first inebriate asylum in the world.

Dr. Turner, as a young physician, grasped at the idea of Dr. Rush, the immediate cause being an inebriate relative who was placed directly under his care. Whether the Rushonian theory had made its impress upon him or whether by a course of independent reasoning he arrived at the same conclusion as Dr. Rush is not material. Independent thinkers often meet at the same cross-roads. Suffice it to say that his thoughts and efforts found their full development in the establishment (1859) of the first and largest asylum or special hospital for the treatment of inebriates this country or the world has ever seen. Dr. Turner conducted this asylum a sufficient length of time to demonstrate the feasibility of the theory advanced by Dr. Rush in the preceding century, namely, "That inebriety was a disease requiring special hospitals for its treatment."

Among Dr. Turner coadjutors who endorsed the disease theory of inebriety was Dr. Valentine Mott, the celebrated New York surgeon, who for over twenty-one years was connected with the work of founding the New York State Inebriate Asylum, and for four years its president.

While over 1,500 of the leading physicians and surgeons

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of New York city and vicinity signed a petition memorializing the State legislature in behalf of the establishment of said asylum, among the signers of this appeal, we note the familiar names of Francis, Bedford, Metcalfe, Watts, Van-Buren, Draper, Clark, Stevens, Doremus, Barker, Post, Wood, Peaslee, Marion Sims, Hamilton, Moore, Alex. B. Mott, Swinburne, Detmold, March, McNaughton, White, Rochester, Quackenbush, Armsby, and a host of other well-known physicians and surgeons.

But while the State of New York, through the exertions of Dr. Turner, seems to have been thus early and active in establishing medical relief for the inebriate, we find almost as his cotemporary and co-laborer in this new field, Dr. Albert Day, who was quietly and unostentatiously working out a similar problem in this venerable city of Boston. "A city that is set on a hill cannot be hid," and Boston, not only topographically so situated, but eminent in the historical annals of this country, in literature, in science, in art, and in her numerous charities, by these very facts, gave prominence to the efforts that Dr. Day was endeavoring to establish on behalf of the inebriate and so Massachusetts in 1857, took her place by the side of the Empire State.

The great State of Pennsylvania is also astir, as if to redeem her prestige of precedence. The mantle of Dr. Rush has fallen on a son of Philadelphia — the late Dr. Joseph Parrish, whose family name was so intimately connected with the medical and charitable interests of the "city of brotherly love" — who became not only a teacher of the new doctrine, but practically demonstrated it by the establishment of an asylum (1865) of his own; and so we see these three great States, after the lapse of a century, join hands in behalf of the inebriate.

Turner, Parrish, Day,— glorious triumvirate! These men, all founders and heads of inebriate asylums, constituted the nucleus of this association, and gathered about them such men as the late Dr. Theodore L. Mason of Brooklyn, L. I.,

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— my revered father — who gave the last twenty-five years of an honorable and useful life to the consideration of the medical care and treatment of the inebriate, his efforts finally resulting in the establishment (in the year 1866) of the present inebriate asylum at Fort Hamilton, L. I.

The late Dr. Willard Parker of New York city, who was an earnest advocate of the disease theory of inebriety, and who wrote and spoke much on the subject. Dr. N. S. Davis of Chicago, Ill., now president of the "American Medical Temperance Association," these men, and others not so prominently active in the work, came forward to endorse the efforts of Drs. Turner, Parrish, Day. Dr. Parrish was the active mind that organized (1871) "The American Association for the Study and Cure of Inebriety." As our able secretary and editor is the one through whose energies its activities are being so universally known, we need not go further into the personnel of our organization, or the medical men, who from time to time have joined us, having been convinced of the truth of our theory. Suffice it to say, that these men, as a rule, stand as peers in the medical profession, and as leaders of medical thought, and, like all such independent thinkers, are accustomed to lead, not to be led.

Our theory was not a popular one. Some looked in on us, investigated our motives, read our "principles," and then departed. But the best of causes had deserters at a critical hour in its history. "They went out from us because they were not of us, for if they had been of us, they would no doubt have continued with us."

Our creed, our principles were of great benefit to us in the earlier stages of our history as an association; all who joined us read these principles on which we founded our association, and to accept or reject our views meant membership or non-membership. Hence, those who joined us joined with a clear understanding and an intelligent purpose, and thus

"The curse of growing factions and divisions never vexed our councils."

This association, a mere handful of men convinced of the

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importance of the cause they espoused, believed as your own late lamented poet, Lowell, wrote, that

> "To side with Truth is noble,
> When we share her wretched crust,
> Ere her cause bring fame and profit,
> And 'tis prosperous to be just."

We were subject to much criticism. The law assailed us on the ground that we were endeavoring to transform the "*Crime* of Drunkenness" into the "Disease of Inebriety"; the church, on the ground that we were endeavoring to transform the "*Vice* of Drunkenness" into the "Disease of Inebriety." The politicians opposed us because we desired that the liquor dealers and distillers should be taxed to support the inebriate asylums that they were so instrumental in filling. The medical profession were coldly indifferent or mildly sarcastic or lukewarm in their support; to the large majority there was not anything in the new departure that promised fame or adequate remuneration of any sort. There were other fields of medicine more attractive, and therefore more desirable. You can always count up on your fingers the pioneers in any department of advanced thought and action, and medicine forms no exception. The secular and religious press objected most strenuously to this little handful of doctors meddling with affairs of church and State. To use their expression, we were "coddling drunkards" and putting a "premium on drunkenness."

It is a glorious thing to live for a principle, especially when that principle carried out results in the emancipation from a most terrible bondage and curse a large proportion of the human race; to take our stand by the side of a Luther, a Wilberforce, or a Shaftsbury; overcome opposition, conquer prejudice, and win peace; and to do all this under the inspiration —

> "Thrice armed is he whose cause is just."
>
> "We live in deeds, not years; in thoughts, not breaths;
> In feelings, not in figures on a dial.
> We should count time by heart-throbs. He most lives
> Who thinks most, feels the noblest, acts the best."

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What a comfort must it be, for you, Dr. Day, in your silent hours of contemplation, to take a retrospective glance of the years that have passed. What discouragements, trials, rebuke, sarcasm, opposition, disappointment has filled the cup that you had to drink of; and yet the draught was mingled with encouragement, commendation, fair, honorable, and just criticism and helpfulness, and as the years progressed the light about you has grown brighter; and now, as we have met to-night to celebrate your birthday, and to exchange mutual congratulations, in what place could we have met more appropriately than in this asylum you have established and carried on successfully for thirty-four years?

We place to-night the laurel wreath of victory and success upon your brow. You have extended the helping hand of the kind physician to thousands of your fellow-creatures; you have restored to the widow her only child; you have reunited the gray-haired sire and his prodigal son; you have made the domestic circle again complete, for through your instrumentality the wanderer has come back.

To literature, art, and professional life you have redeemed those whose light had grown dim, and had almost gone out in the blackness of darkness forever.

Many to-night, as they seek refreshing and health-giving slumber, who otherwise might have "slept the sleep of the drunken," will repeat your name with affection and thankfulness.

Nay, further, if, as some assert, there is not any distinction between the vice of drunkenness and the disease of inebriety, there are those among that "multitude whom no man can number" who will "rise up and call you blessed," for under an almighty and beneficent Providence you exercised an instrumentality that brought them "clothed and in their right mind" to the feet of the Great Physician; and "Paradise Lost," apparently lost to them, became "Paradise Regained," and that instrumentality was "The Inebriate Asylum."

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Yes, the seed of thought planted by Dr. Rush took a century to grow; the ruthless axe of opposition was often lifted against it; the storms of ignorance, bigotry, and prejudice swept over it; but, behold! the tender sapling has grown into a tree fair to look upon, whose roots are embedded firm and deep in the genial soil of success finally achieved; scions from the parent tree have been planted and acclimated in every civilized land; under the shade of this tree the inebriate, no longer uncared for, may rest; at its mossy roots; the pure and limpid spring of total abstinence and sobriety wells forth, and the leaves of this tree are for the healing of the nations.

Behold the inebriate asylum, extending its sheltering arms to a most unfortunate class, perchance to heal them, perchance to give them a place to die in — to give them that which family and church and State cannot directly give them! Hear the monotonous tramp of a mighty host passing through the valley of the shadow of death to an eternal doom! "Is there no balm in Gilead, no kind physician there?" Is man more merciful than his Maker? Are human agencies to supplant divine agencies in the redemption of the inebriate? Nay, we cannot divorce religion and medicine. The Great Physician Himself, who went about healing all manner of disease, has set the everlasting stamp of His approval upon their union: "What God hath joined together let no man put asunder."

While the church may as a body not have understood the inebriate, the God-given principles of religion and humanity on which the church is founded are not inoperative.

While the law may have misapplied its authority, the law is invaluable; without law we could not have that personal control of the inebriate — that *habeas corpus* so essential, indeed a *sine qua non* in the treatment of inebriety. So, then, from the *church*, which is the visible embodiment of religion and all that constitutes the best part of humanity, we get the animus or motive that causes us to stir ourselves in behalf of the inebriate; from the *law* the power

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to execute, to put into operation the plans for the relief of the inebriate; and from *medical science* the intelligent means by which we restore the inebriate to his family, his friends, and his business and social relations.

Thus the church, the law, and medicine, once at such strange variance, join hands in behalf of the inebriate, forming a true "triple alliance." Now, this reconciliation of church, State, and medicine has been brought about largely by the efforts of this association, and all the facts concerning inebriety have been brought out and elaborated, tested and adopted, and presented to the medical profession and the public by this association during its period of existence of over twenty years.

The combined work of its members represents the experience of several inebriate asylums, whose patients furnish the facts and figures on which this association bases its conclusions, and which have appeared in over 200 papers published by this association, prepared as the result of careful study of the inebriate, his family and personal history, diseases, injuries, and social statistics concerning him and results of treatment. A well-conducted "Journal," which has been issued quarterly for the past twenty years, has embodied these papers not only, but the results of foreign thought in England, Germany, France, Switzerland, Holland, and elsewhere on this momentous question; and it has exchanged views with Dr. Kerr and the late Drs. Alford and Dalrymple, Richardson, and Carpenter, the leaders of English thought on this subject; and with writers on this topic in every medical center in France, Germany, Holland, Austria, Belgium, Switzerland, and the English colonies. So, my friends, we come to you with knowledge and experience. We are not simply theorists — closet philosophers. It is safe to say that over 20,000 inebriates have passed before the members of this association. Dr. Day has treated a large number of these, the balance being divided between the different members having asylum connection. We are still seekers after truth. Knowledge is ever progressive. We

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feel we have but entered the path that leads to the solution of this great question; yet we believe we are on the *right* path. The motive power that caused us to enter this path and impels us onward on our course is humanity for the suffering and friendless inebriate. When this whole movement was started by Dr. Turner, the corner-stone was laid in the name of religion and humanity, here was the Genesis of the whole movement.

We have nothing to present to you but truth based on conscientious observation of fact. We trust that the papers to be read will be listened to as from those who have no favorite theory to defend, no fine-spun sophistry to weave before you; but as explorers, who have returned from a comparatively unknown country they have come to tell you something about it. Give credence to what they may say, and then apply the touchstone of common-sense, reason, and experience, especially experience based on medical observation of fact.

If we shall impress you with the justness and importance of our cause, this meeting will have served a double purpose — to do honor to our senior officer, Dr. Day, and enroll your sympathies and efforts in behalf of the "disease of inebriety."

Dr. Crothers was called on and spoke as follows:

As ships on a long voyage come in sight of the harbor, a fascinating interest gathers around them. Involuntarily the inquiry arises of the voyage nearly over, of the storms passed, of what they have seen, and what news do they bring of the great ocean beyond, and what advice and counsel have they for those just starting out.

In the same spirit we come to talk over the past with our honored guest, to gather some lessons that will lighten the future and give renewed hope and courage to the present. Fortunately, we have been sailing on the same ocean for many years, and although far to leeward, we have seldom lost sight of Dr. Day and his work. We have seen some-

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thing of the heavy storms, dense fogs, icebergs, and hidden reefs that have constantly added peril to the voyage.

To-night, as he crosses the outer bar of the long seventy-years voyage, with the distant lights of the highlands pointing out the harbor still many years beyond, we raise the flags and fire the salutes of welcome. Looking backward over the long journey of nearly fifty years, in which Dr. Day has been almost exclusively engaged in the care and treatment of inebriates, many very startling outline facts appear. Facts of history and great reform movements, whose meaning and significance is yet obscure, have been very closely associated with Dr. Day's work. A brief tracing of some of these facts will add to the interest of this occasion.

Up to 1840, the temperance problem was a chaos. On the moral side, a few clergymen and reformers had preached and protested against the abuse of alcohol. A temperance society had started in New York and one in Boston. Public sentiment regarded these efforts with pity and contempt. On the scientific side, Drs. Rush *Calbanis Salvator*, and a few others, declared inebriety a disease; but the same silent contempt greeted these views.

In April, 1840, a small drinking club of Baltimore changed to a temperance society, and called themselves the Washingtonians. Two months later, John Hawkins stopped drinking and joined this society. All this, together with John Hawkins' infectious earnestness, would have passed unnoticed, had it not been for the political campaign of that year. The struggle for the presidency between *Van Buren* and *Harrison* began early, and, for some obscure reason, became associated with the excessive use of cider and stronger spirits. Hard cider, free whisky, and free rum seemed a large part of every political gathering. And, as the struggle grew in intensity and excitement, the use of spirits increased. Temperate men drank, moderate drinkers became delirious from excesses. Business halted, and never before or since has the excitement of politics been so great and so intimately associated with drunkenness in all its forms, extending

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through all classes. At the close of the campaign, Dr. Jewett estimated that over a million voters were practically inebriates or had been repeatedly intoxicated; due very largely to the excitement and excesses of the campaign.

By-and-by, a strong reaction took place, and just at this moment the Washingtonians appeared. Its leaders were reformed men, and urged the pledge with intense earnestness. The excitement of the campaign and its drink excesses had prepared the public mind for this great emotional remedy, the pledge. John Hawkins became the leader, and was a wild, passionate orator, that everywhere enthused his auditors, and roused up an army of lecturers which scattered to every town and hamlet, from Maine to Mississippi.

The political campaign of 1840 broke out again in a great temperance reform wave, and steadily rolled up in numbers and enthusiasm until 1842, when a high tidal point was reached and reaction began. Over half a million persons had signed the pledge, and the evils of alcohol had been discussed in almost every neighborhood in the land. Never before had any reform movement been urged with such terrible earnestness and honest enthusiasm. All the selfish motives of parties and personal interests had disappeared, and the old crusaders' spirit filled all its advocates.

This psychological storm wave crossed the continent and was felt everywhere. In 1842 it began to decline, until five years later it was practically a matter of the past. While a large number of inebriates were saved, its real work was in a different direction, that even to-day it is scarcely yet realized. Like a storm on a close, murky day, it cleared away the mists of ignorance, it destroyed old theories and prejudices, and gave clearer conceptions of inebriety and its evils. The very impetuosity of its appeals to the emotions alone clearly pointed out its ephemeral nature, and gave glimpses of broader and more effectual means yet to come. It not only broke down old theories, but started new ranges of thought, and new fields for humanitarian work. While this reform wave died away it sent out an inspiration and impetus

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to the whole subject that has been the foundation of every temperance organization to this time. The moral side of this subject was suddenly projected far out among the great topics of the times.

When this reform wave receded, it left in embryo the first inebriate asylum in the world — The Washingtonian Hall, a lodging place for inebriates in 1845. Twelve years later, the Home for the Fallen grew out of this lodging house, and Dr. Day appeared as *captain*, *pilot*, *mate*, and *crew*, all in one. Two years later, the State incorporated it as the Washingtonian Home. But few people will ever know the struggle and trials and storm clouds which Dr. Day passed through to get this Home down through the narrows of persecution and savage criticism into the ocean of recognized truth.

The great Pioneer Asylums at Binghamton and Fort Hamilton grew indirectly out of this Washingtonian movement. Literally this apparent exotic wave was the beginning of a great advance, and the starting point from which all concentrated effort to understand and remedy the drink evil began. It was a force that fused and mobilized a tide of oncoming truth that is not yet fully understood. All the temperance organizations and reform movements are outgrowths of the old Washingtonians. The prohibition party to-day is only another Washingtonian movement, more matured and organized, and with a clearer conception of objects to be attained. This last great moral protest against the evils following the indiscriminate use of alcohol is now in the ascendency. It has not reached its high tidal level yet; everywhere it is growing and widening in its influence and power. By and by the maximum point will be reached; and a retrograde movement will follow, and like the Washingtonians, it will be known only in history. The Washingtonians had but one motive and purpose, and they urged this with a terrible earnestness that carried conviction; and had this been a universal truth, it would have lived in the form and machinery they gave to it. The enthusiasm and tremendous efforts

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of prohibitionists are not all lost. Some day we shall see the fruitage; but far away from any present conceptions of what it will be. This last great psychological reform wave is building far wiser than they know.

If we turn away from the popular agitation of moralists concerning inebriety, another view appears. The Washingtonian Home and the small vanguard of asylums for the special study and treatment of inebriety are forerunners of another movement to understand this drink evil. Approaching this problem along the narrow road of science and evolution, the magnitude of the subject increases, and we become conscious of a new unexplored continent looming up through the mists before us, the magnitude of which awes us into silence.

The scientific work in this field alone during this year is a fair illustration of the restless activity and march of this great army of advance. In the first four months of the year, *our Association* held four meetings in New York city, where eighteen papers were read and discussed on the disease of inebriety and its remedies. In May, at Washington, before the American Medical Association, eight papers were read on alcohol and opium inebriety. An American Medical Temperance Association, with sixty members, was formed; the central purpose of which was to study medically the action of alcohol on the body, and its remedies.

In July, this association had a two-days' session at Staten Island, where thirty-one different papers were read by medical men on the effects of alcohol and the remedies for this evil. In the different State medical societies in the past six months, eight papers on this same subject have been read and discussed by physicians alone. Two attractive symposiums of medical opinions on this topic have appeared, one in the New York *Independent*, and the other in the *North American Review*. In England, the British Medical Association which met in July, gave an entire session to the discussion of this topic. A few weeks later at London, the International Congress of Hygiene discussed this same subject as a

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purely scientific one. This is the work of part of a year in this country. In Europe, still greater activity has been manifested. Thus behind the roar of moral agitation the vanguards of science are appearing in all directions. Silently they are crossing frontiers into this new realm, and who can predict what new discoveries are before them?

The drink evil and its remedy is yet in the renascent period. The half century which has passed from the old Washingtonian movement has brought with it a great advance in our knowledge of the nature and causation of inebriety. Dr. Day and the Washingtonian Home have been pioneers clearing the ground and removing prejudices for better work in the coming century.

Through all these years from 1857, this Home has been rescuing the wrecks and castaways that cover the ocean of humanity, and sending back to health thousands of lost ones; and yet far beyond this it has been a solitary beacon light, of a new shore and new continent yet to be explored. We, who are in the dust and conflict of the present, cannot see clearly the influence of any one individual, or note the exact drift of events, except in a very general way. But while we express our congratulations and joy to our honored guest to-night, there is a deep consciousness that the real power and influence of his life and work will appear when the subject of inebriety has passed to higher levels of study.

The pilot who has grown old in guiding the ship down through the tortuous channels, and about the bars and shoals into the great ocean, may be forgotten, but the ship goes on, a silent monument of his skill and memory forever. More than a quarter of a century has passed since Dr. Day helped to form the American Association for the Study and Cure of Inebriety. Nearly all the original members have finished their work and passed away. Dr. Day remains, and as President of our society whose members are scattered over all this country, we offer our warmest greetings. We rejoice with him that he is permitted to see some of the fruitage of his long years of trial and struggle; to see the dawn of a new

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day of psychological study of inebriety that long ago was only foreshadowed by a few stars. Dr. Day and his work have already become a part of the history of the scientific advance of the century. High-sounding compliments and extravagant praise are fulsome at this hour. The army of co-workers and friends who have been with him salute in silence. Across the space which separates him from their personal presence, invisible hands are stretched with warmest welcomes. In the coming centuries, when this great evolutionary march of discovering of the laws which govern inebriety is written, the influence and power of Dr. Day's life and work will be understood. Nearly forty years has come and gone since the old rescue flag was swung out to the breeze on the Washingtonian Hall. Thirty-three years have rolled away since Dr. Day first appeared on the quarter deck in command. To-night the same flag is still flying, the same captain, bronzed and scarred, is on deck. The dark storm-clouds in front have lifted, and a clear sky with beacon lights stretch out into the future. Some time in the future, the captain will go ashore, but the old rescue ship will go on, and the logs and charts of the past will still point out the course for future generations.

To-night, a few old comrades climb up on deck, and with the veteran captain glance back into the cloudy past, and turn with glistening eyes to scan the future. We grow silent with emotion as the thought presses upon us, that this great drink evil will be solved, and the vast ocean, now covered with drowning victims, will be clear and free again.

"Ay, it must come! Old Error's throne
Is crumbling, with our hot tears rusted;
The wrongs which humanity have leaned upon,
Are conquer'd with the heart's blood crusted.
Room! for the higher truths make way;
The dark old theories can live no longer;
They cannot check the opening day;
The world rolls on, the light grows stronger."

The peoples' advent is coming. We separate, but the memory of this event and this hour, and our unexpressed joy

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and thankfulness in again meeting our honored president and guest, is imperishable.

As a slight expression of this feeling, we offer the following:

Resolved, That this association esteem it an unusual pleasure to convey to Dr. Day our warmest congratulations on this the seventieth anniversary of his birthday.

Resolved, That we take great pleasure in noting the fact that Dr. Day has treated more cases of inebriety, and been longer engaged in the work of the medical treatment of inebriates than any other person.

Resolved, That his personal labors in behalf of our association, and the cause of physical study and treatment of inebriety have been always a conscious power which will be felt in the long years to come. We most earnestly desire to place on record our obligations to him for his earnest and persistent efforts to organize the study of inebriety into the realms of science; also, to prove to the world that the physical treatment of inebriates in asylums is the great cornerstone of its future study and success.

Resolved, That a copy of this be published in the JOURNAL OF INEBRIETY and placed on the minutes of our association as a permanent record of our esteem and personal regard.

Again, in the name of our Association, and in behalf of its widely scattered members who are unable to be with us to-night, we send our warmest greetings.

An answer to the watchman cry of, What of the night? comes back to us: The night is passing, the dawn is breaking up the skies, the harbor is in sight, the results and purposes of the seventy-years voyage are looming up before us, and involuntarily a prayer of thankfulness goes up for Dr. Day and his grand life work, and an earnest petition that he may for long years to come be with us, and give further aid in the great evolutionary struggle of the race.

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Dr. Quimby of Jersey City remarked as follows:

Mr. President and Gentlemen:

I hope I may be permitted without any preliminary remarks to congratulate Dr. Day on this his seventieth birthday. Seventy years, most of which time has been faithfully spent in anxious toil, thought, and investigation to alleviate and cure the afflicted. Seventy years in hard and unremitting labor in attempting to correct the mistakes and cure the diseases of others.

Seventy years of life, lived in the most eventful period of the world's history. Mighty battles have been fought. Mighty victories for right and for humanity have been won. Monarchies have trembled, kings have been dethroned and republics established.

Seventy years — what momentous struggles and changes have taken place within that period. Governments have been remodeled, old theories and customs apparently firmly established have been broken up, giving way before the irresistible force of more accurate and scientific investigation.

The medical profession no longer asserts that delirium tremens is caused by the sudden withdrawal of alcohol. It no longer gives alcohol in the treatment and cure of delirium tremens, the hair of the dog no longer cures the bite. The scientific physician no longer asserts that alcohol keeps out the cold, or imparts normal heat, or prevents disease, or promotes *per se* healthy cell growth, or imparts normal mental or physical power. Seventy years has witnessed all this change and revolution. Seventy years of labor and of love, in which ten thousand patients have been treated by Dr. Day. And could this large army pass in review before this audience to-night, could Dr. Day read from his well-kept daily journal, the history, treatment, and progress of each individual case, how grand, interesting, and instructive it would be! He could give facts that would startle the world and throw a flood of light on many dark problems. I hope Dr. Day may be spared to write up these histories for the profession, so we shall know more of this great drink problem and have

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the benefit of his long experience and observation. While many of the great battles fought in the world's history have been carried on by selfish and ambitious men for greed, place, and power, Dr. Day has gone on in his quiet and unobserved way, devising and perfecting a plan of treatment, which has and will be of more benefit to the human race than half the battles of the world, so that the poet may truly sing,—

> "A wise physician, our wounds to heal,
> Is more than armies to the public weal."

As an officer of the American Medical Temperance Association formed in Washington in May last, I convey to you our hearty greetings. We are the latest-born society for the study of alcohol, and already over a hundred physicians have become members to help on the good work. The cause with which you so long ago became identified, has now come to the "front," and at last the profession are turning to the great drink problem for a solution of one of the great evils of the times. Now, Dr. Day, I feel that I express the hope and wish of a vast number of friends when I say, May your life be like Enoch of old who remained over three hundred years, then was not. He vanished away, and while your body may disappear, may your life go on ever youthful and never ending. Seventy years of life in the field you have labored in is only a short part of the infancy of the subject. You cannot grow old although your stay here may far exceed Enoch's, and you cannot die only in the body; your work and influence have passed beyond the limits of the mortal. May it grow and widen on and on in the restless march of the coming ages.

Hon. Joseph Story, the first president of Washingtonian Home, made some very eloquent remarks about the first struggles and early history, after which Dr. Day replied as follows:

An eloquent writer has hazarded the assertion that "words are the only things that last forever." Nor is this merely a splendid saying, or a startling paradox, that may be qualified by explanation into commonplace, but with respect

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to man and his works on earth it is literally true. Temples and palaces, amphitheatres and catacombs, monuments of power and magnificence and skill, to perpetuate the memory, and preserve the ashes, of those who lived in past ages, must, in the revolution of mundane events, not only perish themselves by violence or decay, but the very dust in which they perish be so scattered as to leave no trace of their material existence behind.

There is no security, beyond the passing moment, for the most permanent and precious of these. They are as much in jeopardy as ever, often having escaped the changes and chances of thousands of years. An earthquake may suddenly ingulf the pyramids of Egypt, and leave the sand of the desert as blank as the tide would have left it on the seashore. A hammer, in the hand of an idiot may break to pieces the Apollo Belvidere or the Venus de Medici, which are scarcely less worshiped as miracles of art in our day than they were by idolaters of old as representatives of deities.

Looking abroad over the whole world, after the lapse of nearly six thousand years, what have we of the past but the words in which its history is recorded? What, beside a few mouldering and brittle ruins, which time is imperceptibly touching down into dust,— what, beside these, remains of the glory and grandeur, the intelligence, the supremacy, of the Grecian republics, or the empire of Rome? Nothing but the words of poets, historians, philosophers, and orators, who, being dead, yet speak, and, in their immortal words, still maintain their dominion over inferior minds through all posterity. And these intellectual sovereigns not only govern our spirits from the tomb by the power of their thoughts, but their very voices are heard by our living ears in the accents of their mother tongue.

Words are the vehicles by which thought is made visible to the eye and intelligible to the mind of another; they are the palpable forms of ideas, without which these would be intangible as the spirit that conceives or the breath that would utter them.

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And of such influence is speech on writing, as the conductor of thought, that, though all words do not "last forever,"— and it is well for the peace of the world and the happiness of individuals that they do not, — yet even here every word has its date and its effect: so that with the tongue or the pen we are continually doing good or evil to ourselves or our neighbor.

Yet, after all, how powerless are words to express the limits of grief or pleasure! How inadequate are words to express my gratitude to those assembled here on this occasion, on my seventieth anniversary, for the pleasure and honor conferred upon me, and for the noble and glowing sentiments that have been uttered! This teaches me that this is not a reprobate world that should be cut off from the visitation of charity; that should be represented as having no alternative but to inflict or bear. That mankind are not forever grappling one another by the throat. That there is such a thing as the grasp of friendship; as the outstretched hand of benevolence; as the interchange of good offices; as a mingling, a crowding, straining together for the relief or benefit of our species; and, for this, you, one and all, have my heartfelt thanks.

To give a detailed history of my past life would far exceed both my time and your patience; and, on the whole, be hardly necessary; as it would be almost a history of the temperance cause, from its inception to the present moment, to which my whole life has been devoted. There are a few facts, connected with my early life, which but few are acquainted with, and these I will mention.

I was born in the town of Wells, Maine, in 1821; consequently I am now seventy years of age; and, since the time when I became old enough to form opinions, and act in accordance with my own judgment, I have been an active combatant against the unnecessary use of alcoholic liquors of any description, and utterly opposed to their use, as a beverage, under any circumstances whatever: never admitting artificial stimulation to be designated as a social amenity; nor the

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freedom of intoxication, as the ease of friendly and sympathetic association; nor the frivolity of drunkenness, as the hilarity of joyousness.

When so young as just to be able to write my name, I was enrolled as a member of a temperance society; and, at the age of eighteen, was recording secretary of the first total abstinence society formed in the State of Maine. If any of you are familiar with the history of the efforts which have been made by the people of New England against the power of alcohol, you must remember that, here, temperance societies and total abstinence societies are far from being identical. My ardor increased with years; and, in every place where circumstances occasioned me to become a resident, particularly at Sanford, Maine, and Lowell, Mass., my influence made an impression. In 1850 I became a resident of Boston, and became identified with almost every true benevolent movement made in the city at that period.

In the summer of 1857, a small number of gentlemen, citizens of Boston, associated themselves under the name of "Home for the Fallen," of which, upon urgent request, I accepted charge; and, without tracing its growth step by step, I will simply state that, from this embryo, sprang the Washingtonian Home, incorporated in 1859, the pioneer of all kindred institutions. Thus it will be seen that, for fifty years, I have been an active agent in the temperance cause; during thirty-four of which I have had charge of institutions for the cure of inebriety. I have faith to believe that, in general, my efforts have been appreciated; and that my success has been equal to more than could reasonably be expected, thousands of letters on file in my possession will bear testimony. Much more could be said of personal efforts, experiences, failures, and successes; but I refrain, lest I be charged with egotism.

I cannot hope, in the present stage of the temperance effort, to render any important aid to the cause by novelty of suggestion, as its friends have pretty thoroughly explored the ground. Still, every man who is accustomed to think

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for himself, is naturally attracted to particular views on points in the most familiar subject; and, by concentrating his thoughts on these, he sometimes succeeds in giving them a new prominence, in vindicating their just rank, and in securing to them an attention which they may not have received, but which is their due.

On the subject of intemperance, I have sometimes thought, perhaps without foundation, that its chief essential evil was not brought out as thoroughly and frequently as its secondary evils; and that there was not sufficient conviction of the depth of its causes and of the remedies which it demands. One of the essential evils of intemperance is the voluntary extinction of reason. The intemperate man divests himself, for a time, of his rational and moral nature; casts from himself self-consciousness and self-command; prostrates more and more his rational and moral powers; brings on frenzy, and, by repetition of this, insanity. He goes directly contrary to the rational nature; that divine principle which distinguishes between truth and falsehood, between right and wrong action; which distinguishes man from the brute.

Among the evils of intemperance, and their name is legion, much importance is given to poverty, as if it was the only cause.

We are apt to speak as if the laborious, uneducated, unimproved, were alone in danger, and as if we ourselves had no interest in this except as others are concerned. But it is not so; multitudes in all classes are in danger.

Men of a coarse, unrefined character fall easily into intemperance; because they see so little in its brutality to disgust them. It is a sadder thought, that men of genius and sensibility are hardly less in danger. Strong action of the mind is even more exhausting than the toil of the hands. It uses up, if I may so speak, the finer spirits, and leaves either a sinking of the system which craves for tonics, or a restlessness, which seeks relief in deceitful sedatives. Besides, it is natural for minds of great energy, to hunger for strong

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excitement; and this, when not found in innocent occupation and amusement, is too often sought in criminal indulgence. These remarks apply peculiarly to men whose genius is poetical, imaginative, allied with and quickened by peculiar sensibility. Such men live in worlds of their own creation; kindling themselves with ideal beauty and joy; and too often losing themselves in reveries, in which imagination ministers to appetite, and the sensual triumphs over the spiritual nature. Such natures are peculiarly in danger of losing the balance of mind; of losing calm thought, clear judgment, and moral strength of will; become children of impulse; learn to despise simple and common pleasures; and are hurried to ruin by a feverish thirst of high-wrought, delirious gratification. Hence, the brightest lights of the intellectual world have so often undergone disastrous eclipse; and the inspired voice of genius, so thrilling, so exalting, has died away in the brutal or idiot cries of intemperance.

Would that I could stop here, but I cannot. There is another prey on which intemperance seizes, still more to be deplored; and that is women. I know no sight on earth more sad than woman's countenance, which once knew no suffusion but the glow of exquisite feeling, or the blush of hallowed modesty, crimsoned, deformed by intemperance. Even woman is not safe. The delicacy of her physical organization exposes her to inequalities of feeling, which tempt to the seductive relief given by cordials. Man with his iron nerves little knows what the sensitive frame of woman suffers; how many desponding imaginations throng on her in solitude; how often she is exhausted by unremitting cares; how much the power of self-control is impaired by repeated derangements of her frail system. In all our families, no matter what their condition, these are endangered individuals, and fear and watchfulness in regard to intemperance belong to all. Do not say that I exaggerate your exposure to intemperance. Let no man say, when he thinks of the drunkard, broken in health and spoiled of intellect, "I can never fall so low." He thought as little of falling in his earlier years.

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Among the causes of intemperance, not a few are to be found in the present state of society, more, in fact, than I have time to mention. Some of them I will speak of briefly; the first of which is, the heavy burden of care and toil which is laid on a large multitude of men, who, to earn subsistence for themselves and families, are often compelled to undergo a degree of labor exhausting to the spirits and injurious to health. As a consequence, relief is sought in stimulants. We do not find that civilization lightens men's toils; as yet, it has increased them; and, in this effect, I see the sign of deep defect in what we call the progress of society. That civilization is very imperfect in which the mass of men can redeem no time from bodily labor, for intellectual, moral, and social culture. How the condition of society can be so changed as to prevent excessive pressure on any class is undoubtedly a hard question. One thing seems plain, there is no tendency, in our present institutions and habit, to bring relief. On the contrary, rich and poor seem to be more and more oppressed with the incessant toil, exhausting forethought, anxious struggles, and feverish competitions.

Another cause, intimately connected with the last, is the intellectual depression, and the ignorance to which many are subjected. They who toil from morning to night, without season of thought and mental improvement, are, of course, exceedingly narrowed in their faculties, views, and sources of gratification. The present moment, and the body, engross their thoughts. Unused to reflection and forethought, how dim must be their perception of duty! Undoubtedly in this country, this cause of intemperance is less operative than in others; but, on the other hand, the facilities of excess are incomparably greater; so that, for the uneducated, the temptation may be twice stronger in this than in less enlightened lands. Our outward prosperity, unaccompanied with proportional moral and mental improvement, becomes a mighty impulse to intemperance.

Another cause of intemperance is the want of self respect which the present state of society induces among the

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poor and laborious. Just as far as wealth is the object of worship, the measure of men's importance, the badge of distinction, so far there will be a tendency to self-contempt and self-abandonment among those whose lot gives them no chance of its acquisition. Their condition cuts them off from communication with the cultivated. They think they have little stake in the general weal. They do not feel as if they had a character to lose. Nothing reminds them of the greatness in their nature. Nothing teaches them that, in their obscure lot, they may secure the highest good on earth. Catching from the general tone of society the ruinous notion, that wealth is honor as well as happiness, they see in their narrow lot nothing to inspire self-respect. In this delusion, they are not more degraded than the prosperous; they but echo the voice of society; but, to them, the delusion brings a deeper immediate ruin. Of all classes of society, the poor should be treated with peculiar deference, as the means of counteracting their chief peril; I mean the loss of self-respect.

I might mention many other causes in our social constitution favoring intemperance; but I pass them by, and will suggest one characteristic of our times which increases the tendency to this evil. Our times are distinguished by what is called a love of excitement; in other words, by a love of strong stimulants. To be stimulated, excited, is the universal want. The calmness, sobriety, plodding industry of our fathers have been succeeded by a feverish restlessness. The books that are read are not the great, standard, immortal works of genius, which require calm thought and inspire deep feeling; but ephemeral works, which are run through with railroad rapidity and which give a pleasure not unlike that produced by exhilarating draughts. Business is become a race, and is hurried on by the excitement of great risks and the hope of great profits. Even religion partakes of the general restlessness. In some places, extravagant measures, which storm the nervous system, and drive the more sensitive to the borders of insanity, are resorted to for its promo-

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tion; and people go to church to be excited rather than be improved and instructed.

I have now set before you some of the causes of intemperance in our present social state, that you may have a general idea of what I have been contending against during nearly my whole life. How shall we arrest — how suppress this great evil, — how restore those who have fallen by it to manhood, has been my principal thought; and the doctrines I have advocated and practiced have been as follows:

To heal a diseased limb or organ, you must relieve and strengthen the whole body. So it is with the mind. We cannot, if we would, remove those vices from the poor, which are annoying to ourselves, and leave them, in other respects, as corrupt as before. Nothing but general improvement of their nature can fortify them against that which makes them scourges alike to themselves and others; and the best way to communicate moral strength and principle among the less prosperous, is to increase it among the most favored. Let selfishness and sensuality reign among the prosperous and educated, and the uneducated will reflect these evils in grosser forms. The greatest benefactor to society is not he who serves it by single acts; but whose general character is the manifestation of a higher life and spirit than pervades the mass.

To educate is something more than to teach those elements of knowledge which are needed to get a subsistence. It is to exercise and call out the higher faculties and affections of a human being. Education is not the authoritative, compulsory, mechanical training of passive pupils; but the influence of gifted and quickened minds, on the spirits of the young. Of what use is the wealth of this community but to train up a better generation than ourselves? What, but human improvement, should be the great end of society? The poorest child might, and ought to, have liberal means of self-improvement. We need an institution for the formation of better teachers. We want more and better teachers for all classes of society, for rich and poor, for children and

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adults. One of the surest signs of the regeneration of society will be the elevation of the art of teaching to the highest rank. To teach, whether by word or action, is the highest function on earth. Was not Christ called "a teacher, come from God?"

We should discourage the use of ardent spirits in the community. To remove what intoxicates removes intoxication. In proportion as these are banished from our houses and tables, our hospitalities; in proportion as those who have influence in the community abstain from their use, and lead their dependents to do so, in that proportion the occasions of excess must be diminished, the temptations to it must disappear. It is objected, I know, that, if we begin to give up what others will abuse, we must give up everything, because there is nothing that men will not abuse. But no such plea can be set up in the case before us.

After these remarks it will follow, that we should discourage the sale of ardent spirits. What ought not to be *used* as a beverage, ought not to be *sold* as such. What the good of the community requires us to *expel*, no man has a moral right to *supply*. That intemperance is dreadfully multiplied by the licensed shops for the selling of liquors, we all know. That they should be shut up, every good man desires. Law, however, cannot shut them up, except to a limited extent. Law is here the will of the people, and the legislature can do little unless sustained by the public voice. Hence, we need an enlightened and vigorous public sentiment which will demand the suppression of these nurseries of intemperance. But, *beyond all* and *above all*, the charity, the *love* that beareth all things, believeth all things, etc.

And so I might continue mentioning to great length, agencies that might be employed; but it is unnecessary; and I will not weary your patience which I may have tired. This is but a brief synopsis of the work of my life. There have been discouragements, but I do not faint. Truth is mightier than error; virtue, than vice; good, than the evil man. In contending earnestly against intemperance, we

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have the help and friendship of Him who is Almighty. We have allies in all that is pure, rational, divine in the human soul; in the progressive intelligence of the age; in whatever elevates public sentiment; in religion, in legislation, in philosophy, in the yearnings of the parent; in the prayers of the Christian; in the teachings of God's house; in the influence of God's spirit. With these allies, friends, helpers, let good men not despair; but be strong in the faith, that, in due time, they shall reap, if they faint not.

And now, friends, let me say one word more in relation to myself. I have now reached the "three score and ten" years that the Psalmist allots as the normal measure of human life. My bank account of material wealth is exceedingly small, but I am constantly receiving testimonies of the good will and wishes of those who have been blessed by my efforts, and the institution which I have the honor to represent.

When I commenced my labors in this field, I was obliged to cultivate unbroken ground and tread unknown paths. Myself, and others who were associated with me, walked by faith alone. We had no precedents to which we could refer. The way was dark, and the clouds were lowering, but the nature of our work was soon heralded, not only over our own country, but the civilized world; and messages were sent to us to inquire about the nature of the blazing star which had arisen in the East of civilized America. Then people and nations have since established institutions similar to our own; and success has attended all which have been conducted on the principle that was first announced by us, and the work will go on as a great factor in the redemption and cure of those who have fallen by the enemy of our race — intemperance.

I have treated, during the last thirty-four years, nearly eleven thousand cases of inebriety, most of whom had descended low in that path; and they have represented all classes of society,— from the presidential mansion to the lowest hovel or habitation — and have embraced national

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senators and representatives, judges of our courts, lawyers, physicians, clergymen, and, in fact, there is no calling, high or low, whose representatives have not been under my care. Had I time to give personal histories of cures, I could prove the saying that truth indeed is stranger than fiction.

I will now say, in closing this somewhat lengthy address, that should I, "by reason of strength, reach four score years," I shall continue my work even to the end.

The exercises closed with a fine collation and music. It is very gratifying to note, that among the large number of letters of congratulation and regrets in not being present, were many from old patients whose restoration dated back from ten to thirty years. These letters were full of deep gratitude, and were the most eloquent tributes that could be paid Dr. Day. They will be published in near future.

This occasion will be memorable in our Association's history, as clearly indicating a public recognition of the early pioneers, who so many years have struggled on against all criticism and opposition.

We rejoice in this public tribute to Dr. Day and his work, confident, that in the coming years, a clearer and fuller conception will reveal lines of work and influence unseen at present.

THE USES OF SULPHATE OF SPARTEINE IN CASES OF MORPHINE HABIT. — M. Ball and Dr. Oscar Jennings, after considerable experience in severe cases, have found the best course of treatment for tiding over the difficulties of the time of the compulsory abandonment of the morphine is by hypodermic injection of sulphate of sparteine in doses of from one-sixth to one-third of a grain. This acts as an immediate cardiac stimulant. They do not find sudden and complete suppression of the use of morphine in such cases always advisable, but give some occasionally in dangerous collapse. They testify also to the usefulness of a few drops of a solution of nitro-glycerine put on the tongue as giving momentary relief in moments of crisis.

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THE RISING TIDE.

This title describes the very unusual medical agitation manifest both in this country and England, relating to inebriates and alcohol. All the leading medical journals have given opinions freely on the general subject. Ten of the State medical societies which have met since January have had from one to four papers on alcohol or inebriety. Our association seems to have led in this field by its monthly meetings in New York, which began in December, and lasted until April. Twenty-three papers were read and discussed at these meetings. In May the American Medical Association had eight papers read and discussed on the topic of alcohol and opium inebriety. At this same meeting a medical temperance association was formed in which sixty-four physicians became members, the special object of which was the exclusive study of alcohol and its diseases.

Then followed the widely-advertised medical congress.

The managers of the Prohibition Park, at Staten Island, New York, invited several hundred physicians to meet at that place, July 15th and 16th, and discuss the value of alcohol as a food and medicine. Nearly forty physicians accepted and offered papers on the various phases of the subject, thirty of which were read by the authors, and five by other persons, and two or three did not appear. Dr. N. S. Davis of Chicago consented to preside, and Dr. T. D. Crothers was made secretary. As these were the leading officers of the Medical Temperance Association, the meeting became practically the first general meeting of that association.

The opening address by Dr. Davis was a crisp resumé of the latest conclusions concerning alcohol and the superstitions which still clung to it medically.

Dr. Porter of New York followed in a worn-out defense of the food value of alcohol.

Dr. Chenery of Boston gave the extreme arguments condemning its use in every condition of life.

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Dr. Keely praised alcohol in a strange, confusing way.

Mr. Gustafison read a paper on the effects of alcohol on the brain, giving a fair review of many of the leading experiments and results of the action of alcohol.

Dr. Bradner of Philadelphia followed in the same line showing the possible dangers and uncertainty of this remedy.

In the afternoon session, Dr. Crothers of Hartford urged the disease of drunkenness and its curability in asylums.

Drs. Wheeler and Broady of Chicago showed that alcohol could be dispensed with in the practice of medicine, and Dr. Wood of New York denied this and defended his position.

Dr. Holbrook pointed out the evidence on which the diminished longevity followed from the use of alcohol.

Dr. Green of Ohio answered the question in the affirmative, Does moderate drinking increase the danger when attacked by other disease?

Dr. Thwing of Brooklyn showed the very close relationship between climate and inebriety.

Expenditure, resources, and maintenance of the human economy, physiologically and chemically considered; and what are the effects of alcohol on the physical, chemical, and vital propertes of the animal tissues and fluids, were the topics of papers that were not very clear, by Drs. Hartman and Paddock of New York, and Dr. Peekumen of Detroit.

Dr. Cutter of New York showed microscopic views of the alcohol yeast plant, and Dr. Wheeler exhibited and described some new forms of drugs made with the sugar of milk. The new laws for the control and punishment of inebriates in Massachusetts were described at length by Mr. Spaulding, secretary of the prison commission.

The first topic of the second day was, "What Way May Physicians Help to Stay the Ravages of Intemperance?" which was variously presented by Drs. Thomas of Baltimore, Pooler of New York, Owen of New Jersey, and Blackmer of Springfield. "Alcohol in Producing Crime among Women" was the topic of Dr. Hall of Brooklyn. "Ammonia *vs.* alcohol in pneumonia," "Are Men Able to do More Work Without the

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Use of Alcohol," "Is Alcohol a Poison, and Should It be Used except under Medical Direction?" were topics that brought out a wordy discussion. "Does the Moderate Use of Fermented Liquors Injure the Body and Brain," was the topic of two fair conservative papers by Drs. Mann of Brooklyn and Drayton of New York. Drs. Houghton of New York and Crane of Newark struggled with the topic of "The Use and Abuse of Alcohol in Medicine." Why Drs. Rankine of Brooklyn and Morris of Buffalo discussed the "Woman Doctor, her Place and Work," was not clear. "The Responsibility of Prescribing Alcohol," and "The Use of Alcohol, First as a Medicine, Second as a Beverage," were two topics that Drs. Morris of Texas and Roberts of New York did their best to explain. Then Dr. Quimby of Jersey City took up "Alcoholic Beverages," and inquired if they aid digestion and assisted in the assimilation of food, and decided the question in the negative after a strong array of arguments.

"The Hereditary Effect of Alcoholism," was very fairly presented by Drs. Burns of Fort Hamilton and Hanchett of New York City. Dr. Lambert's paper on "The Relations of Alcohol and Heat to the Nerve Centers," was treated very exhaustively. Dr. Davis described "The Temperance Hospital and Its Work," and Dr. Work showed how alcohol affected the heart. Dr. Shepard of Brooklyn, urged the value of the Turkish bath in the treatment of inebriety, and Dr. North believed in general use of all physical and moral means.

The congress closed with some congratulatory speeches, and its real success was clearly a surprise to all. Notwithstanding some dogmatism and extreme theories, the general scope of the papers was good. The constant repetitions of old and new theories showed the sad need of original investigation. The discussions which followed the reading of these papers indicated much thought and eagerness to study and understand the facts. It was clearly impossible to expect any very marked results from a promiscuous gathering of physicians, without any plan, or con-

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census of opinion. Notwithstanding this, it was evident that such a movement was necessary to clear away the ground and prepare the way for a more exact study. This medical congress will be a historical event in the future, and will be the beginning of other and more important conventions. As a hint and promise for the future, it was one of the most successful gatherings of the year.

In July the section of medicine of the British Medical Association gave an entire session to the discussion of the effects of alcohol, at the annual meeting at Bournemouth. Dr. Wilks, the surgeon of Guy Hospital, opened the discussion in a long, rambling paper, in which he alternately praised and condemned alcohol as a remedy. He made prominent the fact that alcohol was a sedative and not a stimulant, that it should never be given to children, and never prescribed because the patient was simply weak and debilitated, finally stating that our present knowledge of alcohol was almost purely empirical.

Dr. Bucknill followed, fully agreeing with the paper that alcohol had some merits as a food and medicine.

Dr. Kerr stated at some length his views and reasons for believing alcohol to be a poison and sedative, and also a narcotic. He rarely had occasion to give it, and when he did it was in the form of a tincture.

Dr. Ridge spoke of the danger of paralysis from the use of alcohol. It was its narcotic action that made it so popular. He urged that alcohol be recognized as a medicine, and treated as any other poison was.

Sir J. Bennett condemned the use of spirits as a medicine, and thought it was of value as a medicine.

Prof. Summola of Naples, Italy, referred to the sobriety of the natives in wine-drinking countries. He had used glycerine in the place of alcohol in fevers, with the best effects, and thought alcohol a dangerous remedy.

Dr. Dryscale was convinced that alcohol was the fertile source of many of the most incurable diseases; as a remedy

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it was not certain or safe, and the use of it always shortened life.

Dr. Aubrey, from a long and careful experience, rarely ever used alcohol as a medicine.

Dr. Robertson considered that purity of spirits was at fault, and persons who continued to abuse it should be prevented by State interference.

Dr. Odell believed in total abstinence in all cases, and rare use of spirits as a medicine.

Dr. Cummings thought that it was dangerous advice to use spirits in cases of nervous dyspepsia. He was convinced it could be greatly abused in medicine.

It was significant that a number of physicians asked to be excused from making remarks on this subject, giving as a reason want of accurate knowledge of the subjeet.

The International Congress of Hygiene and Demography, which met at London in August, took up the subject of alcohol, its use and abuse. Sir Dyse Duckworth opened the discussion. While deploring the prominence of the evils following the use of alcohol, he defended it as a medicine of great value, and of social influence in the progress of civilization. He believed it a food and anæsthetic, and regretted that a certain laxness was growing regarding the punishment of inebriates.

Prof. Westerguard of Copenhagen read the second paper on "The Relation of Alcoholism to Public Health, and the Methods to be Adopted for its Prevention." He discussed the alarming evils which grow out of the indiscriminate sale of alcohol, and the danger to the communities. Reviewing the different methods of control by moral and legal means, he decided that restricted license was so far the most practical. He urged a more careful gathering of statistics and thought that homes for the detention and cure of inebriates promised much in the future.

M. Millett of Berne doubted the right of the State to interfere with the privilege of using wine and spirits, but urged that its excessive use should be checked. He thought a

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great distinction should be drawn between distilled and fermented spirits.

Dr. Norman Kerr said that the loss of life through alcoholism was appalling. He had estimated the number of deaths prematurely occurring in the United Kingdom of Great Britain and Ireland every year at 40,000 from personal intemperance. To this direct annual premature fatality of 40,000 inebriates there must be added double that number of deaths of individuals occurring, not directly from their own habits, but indirectly, through accident, violence, starvation, neglect, and disease. The average worth of an adult to the community has been reckoned at 2s. per day. He calculated that these premature deaths meant a loss of £6,260,000 to the nation every year. The waste from alcoholic disease, over and above the waste from alcoholic deaths, was most serious, and he put this loss to our national wealth during 12 months from alcoholic intemperance at £2,880,000, leaving out of the reckoning altogether the considerable number of premature deaths and of attacks of non-fatal maladies arising from alcoholic indulgence in quantities commonly called "moderate," "free," and "generous." To these expenses there must be added a large proportion of expenditure on pauperism, the administration of justice, the police, and other expensive charges. Still further, there was a mass of mental unsoundness, moral disorder, and social tumult. Looking yet further ahead, reading the future from the experience of the past and present, there could be discerned an enormous increase in the next and succeeding generations of mental impairment, defective control, paralyzed will, and degraded *morale* from inherited brain degeneration through the poisonous influence of alcohol on parental organ and tissue. All this mischief was avoidable. How could it be remedied? The remedial process would require time, extending over several generations, but the evil could be remedied. How could this be done?

I. By recognizing inebriety (or, as Dr. Kerr had ventured to call it, "narcomania," a mania for intoxication or

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torpor) as a disease, and drunkenness as very often but an effect or symptom of disease. A fair proportion of such cases, as the experience of the Dalrymple Home for the Treatment of Inebriety and other similar hospitals proved, could be cured.

II. By amended legislation (the existing Inebriates' Acts applying only to well-off inebriates voluntarily asking to be admitted to a licensed retreat, under the forbidding requirement of appearance before two justices) to provide for (*a*) compulsory reception and retention of inebriates too demoralized to apply of their own accord, (*b*) for reception of voluntary applicants on a simple agreement, without appearance before justices, (*c*) for the care and treatment of the poor and those of limited means.

The adoption of such urgently called for measures in the interests of the individual, of the community, and of the administration of justice, though of vital importance, touched but the fringe of the subject. For the prevention of alcoholism in the future, a knowledge of the poisonous action of alcohol on body and on brain ought to form an integral part of education. Immunity from the physical, mental, moral, and social ravages wrought by alcoholism could be eventually secured only by general abstention from even the "limited" use of intoxicants; their exclusion from social, political, and sacred functions; and the scheduling of alcoholic beverages as a poison under the Pharmacy Acts, or by some other legislative enactment, the prohibition of their manufacture and common sale.

Sir Joseph Fayrer urged that persons in warm climates should be total abstainers, and that the chronic cases could be cured by appropriate remedies in hospitals.

Dr. Hewett of St. Paul, Minn., thought the efforts of women were more successful than others in the temperance cause.

Prof. Allighare was sure the true remedy could be found in legislating for the quality of the alcohol.

Dr. Kinhead of Dublin agreed with Dr. Kerr that ine-

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briety is a disease, and not a purely voluntary and moral offense. It followed, therefore, that legislation could be directed against it, whereas it was well known that it was useless to attempt to legislate against moral offenses. It has been considered to be the inalienable right of every Briton to get as drunk as he likes, when he likes, and where he likes, and the law cannot punish him unless he does some mischief. Such a law is cruel and silly. With regard to the taking of a pledge, he was not a great advocate of the value of such a proceeding. To keep the pledge when taken was a daily strain upon the will power, and it was this will power that was so weak in these people, while a broken pledge was a shock to the moral system which might lead to a worse state. He concluded that the pledge was useful where a tendency has developed for drink, and where a neurotic tendency exists, and in the young. He urged the establishment of asylums for inebriates.

Dr. Owen explained the strange error which had grown out of his statistics.

Sir Barrington discussed the connection between idiocy, lunacy, and inebriety, and believed that the restrictions of the traffic in no way to be the most practical measures. This closed the discussion which, like the others, was chiefly noted for its uncertainty and doubt, and the evidence of the urgent need of more extended study.

The *London Daily Telegraph* caught the infection of publishing opinions of physicians on inebriety, and recently published two columns of cabled reports and opinions of American physicians.

Dr. Blanchard, superintendent of the Inebriates' Home, New York, declares that there is no specific for inebriety, and that forty per cent. of his cases are cured. He believes that the mental vigor of the patient has much to do with his permanent restoration. He believes that medical and hygienic treatment gives the greatest promise of cure.

Dr. Day of Boston treats all his cases as monomaniacs and diseased. He has had ten thousand cases under his care,

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and believes strongly in hereditary influence and in exact physical and medical care.

Mr. Wilkins of Washingtonian Home at Chicago claims to have been fifty years in this work. This is an unusual statement, as the first asylum ever organized only dates back thirty-four years. His plan of treatment is medical, hygienic, intellectual, and moral. He thinks fully sixty per cent. are permanently cured.

Dr. Godding of the insane asylum at Washington has found strichnia the best cure for inebriety. Dypsomania is true insanity. He thinks all asylums fail because they have not power of control for sufficiently long time.

Dr. Dana of Bellevue Hospital describes the method of treatment in that hospital.

Finally Mr. Bunting of New York reiterates his mediæval theories with all his old-time presumption.

These views seemed to have created an intense interest in England. For four weeks the *Telegraph* published daily all sorts of letters, from all sorts of persons, advocating all sorts of theories. Thousands of readers were astonished at the excitement and sudden interest in the subject.

The discussion has not ended, and evidently the British public have commenced to talk and listen to the question, Is inebriety a disease, and can it be cured?

The New York *Independent* organized a form of spectacular symposium on the cause and cure of inebriety. The editor's confused knowledge of the subject, and the startling presumption of some of the writers emphasized more clearly than ever the need of exact scientific study. The strange grouping began with an excellent note on alcoholism, by Dr. McDonald of Clark University, who urged the physical bases of inebriety and its relations to insanity; also the value of asylum treatment. Charles A. Bunting, manager of the New York Christian Home, followed, urging that inebriety was always a sin and vice, to be cured by the "gospel remedy." His statistics to prove that inebriety was not hereditary were startling, and unsupported by any student or writer

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of this subject. While urging the moral nature of this disorder, he mentions the physical means essential for cure in practice in his Home.

The next paper on the sources and tendencies to inebriety, by Dr. L. D. Mason of Brooklyn, N. Y., was a clear presentation of the facts which scientific study had indicated, showing the hereditary origin and the physical nature of the drink craze.

Police Justice Kilbreth described his views of the causes of inebriety. He is positive that it comes from laziness and want of home comforts, and that inebriety is always acquired. He believes in short sentences, and doubts the curability in asylums.

The matron of the Hopper Home for Fallen Women described the work and the relation of inebriety as an active cause of crime in women. Dr. Daniel, physician to this Home, gave a startling picture of the bad influence of station-houses on inebriate women, and believes that inebriety should not be treated as a crime.

Dr. Dana of Bellevue Hospital described the treatment of inebriety at that place, and believes that the hereditary element is a strong predisposing cause, and also the danger from bad spirits is not properly considered.

Prentice Mulford, an editor, believed inebriety begins in exhaustion, and its cure depends largely on the influence of mind upon mind.

The matron of the Riverside Rest for Women describes their work, and points out the danger of servant girls using wine when tired.

Charles J. Perry, a druggist, thought inebriety decreasing, and that inebriate asylums are the only places for a radical cure. He has no confidence in specifics for this evil.

Dr. McGlynn, president of the Anti-Poverty Society, urged that poverty and physical exhaustion is more often the cause of inebriety. The best remedy is to improve the social condition, and apply moral remedies.

The editor of the *Independent* summed up the conclusions

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which he thinks these papers teach: 1st. That the evil of inebriety is complicated and touches a number of persons and variety of interests. 2d. The results are so serious that every possible method should be used to check it. 3d. The improvement of family life and home influences is all-important. 4th. Coffee-houses and other heathful resorts should be open. 5th. That the gospel method is a successful one, and should always be used. 6th. That medical treatment cures many cases, and the subject should be continually studied. 7th. That inebriate asylums should be maintained and the best medical talent employed in their cure. 8th. The young should be taught the effects of alcohol. 9th. The public should be warned against all advertised remedies as specifics. 10th. The importance of total abstinence and the suppression of the drink traffic should be emphasized.

The North American Review published the opinions of four physicians as to the cure of inebriety with special reference to the alleged facts of specifics for its cure. Dr. Hammond led with an emphatic denunciation of the possibility of any specific. Dr. Crothers discussed the entire subject. Dr. Carpenter doubted any specific remedies, and with Dr. Edison agreed that inebriety was a disease and curable in some cases. The daily papers all over the country joined in a free expression of opinions. Even several clergymen preached on this topic from the pulpit.

This brings only a partial history of the great oncoming discussion and agitation of alcohol and inebriety up to October. Clearly a new tide of scientific thought is coming in.

Alcoholism and Tubercular Disease.—Dr. Hector Mackenzie's paper, read at Bournemouth, was concerned with the relation of alcoholism and phthisis and other forms of tubercular disease. The conclusions he drew were that phthisis was not infrequent among the intemperate, and that in such cases the disease was particularly intractable and ran a rapid course. In a large proportion of cases of phthisis, in which no hereditary tendency could be traced, a history of intemperance could be found.

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Abstracts and Reviews.

AT a late meeting of the Virginia State Medical Society, Dr. Langhorn of Lynchburgh introduced the following, which was referred to a committee of five Fellows, with power to take such steps as was necessary:

WHEREAS the General Assembly of Virginia, by an act approved March 13, 1872, incorporated an Inebriate Home;

WHEREAS this act has never been carried into effect,

Resolved, That this society heartily approve the objects of said act, and do earnestly request the Legislature of Virginia, at its next session, to make an appropriation for the purpose of establishing such an institution to be governed by such rules and regulations as to them may seem wise.

A Winter Sanitarium on Columbia Heights, Brooklyn, N. Y., where invalids can have all the quiet medical care and comforts, together with all the pleasures and attractions that New York city can offer, only a few moments away, is a new feature of Dr. Shepard's well-known home. Nervous invalids, who dread long journeys and poor, dreary surroundings, will find this an ideal place, where retirement and every cheerful environment that can be wished for is accessible at all times. A winter home will be very popular at this place.

We take great pleasure in urging our readers to become subscribers of the Humboldt series of monthly volumes. The best literature and thought of the times appear in this series. Send to Humboldt Publishing Co., No. 19 Astor Place, New York city.

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MENTAL SUGGESTION; By Dr Ochorowiez, Prof. of Psychology in the University of Lonbergh. Humboldt Publishing Co., Astor Place, N. Y. City, 1891. Price per double number, $1.20.

This work of 369 pages is one of the most readable and clearly written of any of the technical works of the year. The title suggests hypnotism, but the author attempts to prove that animal magnetism is the real force. We may differ from him in many of his conclusions, but we must concede that he has given the most complete original treatise on both hypnotism and magnetism which has been written. He has given a clear summary of a vast amount of literature not accessible except in the largest libraries. In brief, every student of psychology should be acquainted with this book. The methods pursued, and the literary style make it a model scientific work to be followed. For clearness and simplicity of expression, we commend it to every medical reader.

M. L. Holbrook & Co. of New York have published a little work which will be greatly praised by all admirers of Carlyle. It is Prof. Flügel's study of the moral and religious development of Thomas Carlyle. As a critical and very just study of Carlyle's belief of Christianity and the higher metaphysical topics of the age it is admirable. It is also a psychological study of special interest to physicians, as showing the growth and development of a rare genius, who struggled against various diseases that warped his entire life. Send to the publisher for a copy.

The New England Medical Monthly celebrated its tenth year by giving the portraits of a large number of prominent medical men who had been contributors. Dr. Wile is a firm believer in evolution, and we may expect great changes in his journalistic work in the future.

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The Homiletic Review of New York city is particularly interesting, because of the scholarly reviews of German thought and progress. Other able papers appear that are worth many times the subscription. Send to Funk & Wagnalls, New York city.

The Popular Science Monthly grows more and more valuable, and illustrates in its history the evolution of human thought. No other magazine visitor can bring the physician larger conception of life, and the restless movement of thought in all directions.

"A monthly journal of medicine devoted to the relation of climate, mineral springs, diet, preventive medicine, race, occupation, life insurance, and sanitary science to disease," is the announcement upon the cover of *The Climatologist* published in Philadelphia and edited by Drs. Keating, Packard, and Gardiner. The first number appeared in August and contains some excellent articles, while the form of the new journal is unexceptionable.

Intemperance is a cause of insanity, and insanity is a cause of intemperance.

Drunkenness and insanity both act upon each other as cause and effect. If there is a predisposition to insanity in an individual, indulgence in alcoholics is sure to develop it; and, on the other hand, there are individuals who show their insanity by a disposition to drink. Habitual drinking hurries a man through his life with giant strides. Youth quickly disappears and prematurely assumes the appearance of advanced life. The dull, heavy eye, the hardened features, the livid or jaundiced skin, the tremulous hand, the tottering step, the weakened muscles, and the shattered nervous system, caused by quaffing the poisonous glass, are evidences that the melancholy victims, who ought to be in the prime

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of life, are but shadows of mortality, and are on the lightning express for the Stygian shore.

Suppose a habitual drunkard should reform. He will prolong his life by so doing, but never will have the robust health that he would have enjoyed if he had never indulged in intoxicants. It is not true, as commonly supposed, that, after a disorder or disease from which we have recovered, we are as before. No disturbance of the normal course of the functions can pass away and leave things exactly as they were. A permanent damage is done; it may not be immediately appreciable, but it is there, and, along with other such items, which nature, in her strict accounting, never drops, it will tell against us to the inevitable shortening of our days.

It is through the accumulation of small injuries that constitutions are commonly undermined, and break down long before their time. If we call to mind how far the average duration of life falls below the possible duration, we see how great is the loss. When, to the numerous partial deductions which bad health entails, we add this great final deduction, it results that ordinarily one-half of life is thrown away.

Those who have been addicted to the excessive use of alcoholic beverages for a number of years may be restored to a state of sobriety, but they are generally left with an entail of chronic disease which eventually ends their career. They die temperance men, but die as a result of disease contracted by the excessive indulgence in alcoholic liquors years before. There are living to-day, men who once were intemperate, and who will never again use intoxicants, who will die from the effects of their previous use which still cling to the system. The habit of drinking has been abandoned, and nature and remedies are given a chance to do their part toward reinstating the individual in a normal relation toward society and the world, but the vital organs have been injured beyond reparation; the machinery has been nearly worn out, and only works with the semblance of normality by the strictest watchfulness and care.— Dr. Clum.

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PROGRESS OF LEGISLATION FOR INEBRIATES.

The voluminous correspondence which for some time past has been occupying a large space in the *Daily Telegraph* is but the latest indication of the increasing interest in the project of thoroughgoing legislation for inebriates now taken by the general public. The persistent though quiet work of the Inebriate's Legislation Committee of the British Medical Association, and of the Society for the Study of Inebriety, has laid the foundation of an enlightened public opinion which will never rest till the great step already gained in the enactment of permanent measures for the medical care of voluntary applicants for treatment in a retreat for inebriates has been followed by effective provision for the poor, as well as for the compulsory reception and detention of such inebriates as have been too will-paralyzed to apply for admission of their own accord. The *Telegraph* letters evidence a strong endorsement of such an amendment of the law, not the least gratifying feature being the acceptance of the results of medical research as a basis of fresh legislation by a member of the legal profession, who agreed with the full legislative proposals of the association, and who is to follow up his endorsement in a paper and suggested bill, to be laid before the Society for the Study of Inebriety. The general feeling evinced at the recent Congress on Hygiene in favor of compulsion, and a national provision clearly indicated the tendency of foreign opinion. In France and one Swiss canton this power already exists, and is proposed by influential statesmen in Austria, and by the German Emperor in a bill to be brought before the Reichstag. From nearly every nation on the Continent of Europe there comes a similar demand. In the United States the number and extent of homes or hospitals for the treatment of inebriety have largely increased, some of these institutions receiving no inconsiderable portion of their revenue from the authorities. Several of our colonies enjoy such compulsory powers as would enable our retreats in England to do immeasurably more effective work — though what has been achieved already has been

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most encouraging — than anything yet accomplished under our purely voluntary system. The report of the Inspector of Retreats in England for 1890, just issued, is the most satisfactory which he has yet made. One hundred and nine patients were admitted during the year, the highest number in any twelve months since the passing of the first Inebriates' Act in 1879. The licensees generally state that the longest period of detention permitted by the Act (twelve months) is too short in many cases to accomplish the end in view. A new retreat for twenty women has been opened near Manchester, and a summary is given of the results in the 224 cases in all discharged from the Dalrymple Home at Rickmansworth. Of the 189 cases the history of which has been traced, 104 had been benefited. In England the principle of voluntary surrender of individual freedom in the hope of cure has been, by the existing Inebriates' Acts, permanently established. What is now needed to render the law efficient is legislative provision for compulsion when necessary for the care and treatment of the poor, and for the sweeping away of the present vexatious hindrances to the reception of inebriates themselves applying for admission. — *British Medical Journal.*

MEDICINE AND ALCOHOL. — The First International Medical Congress (President, N. S. Davis, M.D., American Medical Temperance Association of Chicago, Ill.), was held at National Prohibition Park, Richmond County, N. Y., July 15th and 16th. Among the eminent physicians who signed the call for this congress, were Dr. L. D. Mason, Consulting Physician to the Fort Hamilton Asylum for Inebriates; Dr. Orlando B. Douglass, President of the Medical Society of the County of New York; Dr. Edward C. Mann, Brooklyn; Dr. T. D. Crothers, Hartford, Conn., Editor QUARTERLY JOURNAL OF INEBRIETY; Dr. C. S. Illiot, Toronto, Canada; Dr. W. W. French, Chattanooga, Tenn., and more than 200 others, representing every section of America.

The scope of the papers presented were far reaching, and manifested a very general opinion that intoxicating liquors are of little or no value as medicines, and that the pharmacopæia provides satisfactory substitutes. The beverage use of all intoxicating liquors was unqualifiedly condemned.

The report of papers read at this congress are now ready. 12mo, manilla covers. 25 cents, post free. Funk & Wagnalls, publishers, 18 and 20 Astor Place, N. Y.

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Editorial.

RECENT LITERATURE ON ALCOHOL.

It is a curious psychological fact that most of the current literature concerning alcohol, its use and abuse, is undoubtedly written by moderate or periodical drinkers, or by total abstainers who have been excessive drinkers, or by another class who have suffered in some indirect way from inebriety.

The strange papers which appear in defense of the therapeutic value of alcohol, from a chemical and physiological basis are founded on theories that are simply assertions, and without support from any facts; also the illogical confused conclusions (so foreign to the authors when they write on other topics) point clearly to an unconscious personal egotism and bias that cannot be mistaken. The hysterical intensity with which they condemn the doubters of the value of alcohol, and the personal bitterness manifested, does not come from a calm, judicial, scientific mind. The credulity in the assumption, that certain experiments have revealed the whole truth, and are infallible, or that certain statements of men eminent in some departments of medicine are equally infallible, points to a distinct personal bias. The narrow egotism of some writers who assume that alcohol and its action on the body are fully known, and those who doubt it are fanatical, are also sad reflections of their alcoholic personality.

While it may not be true that all defenders of alcohol as a medicine and beverage are themselves alcoholic users, it is true that all such views show a narrowness of reading and failure to realize the drift of scientific advance in this direction. On the other side, the bitter dogmatic condemnation of alcohol in every way are strong hints of similar personal conditions that are far from being reliable.

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The most that can be said is, that so far, all scientific study of alcohol fails to sustain the common opinion concerning its value as a beverage or medicine. But this does not warrant its general condemnation, or support the wild assertions of reformers It clearly shows that more study and more facts are needed from which to draw accurate conclusions. The same may be assumed of these extreme writers against the use of spirits. They are personal sufferers, in themselves or families, from alcohol excesses in the past, or they have failed to read carefully the scientific advances of the times.

Another fact appears prominently. Many of these authors of papers which take extreme sides are credulous, unreasoning men, governed largely by mental surroundings. Thus, one has a large clientage of those who believe in alcohol as a beverage, and, unconsciously, such views became firmly fixed in his mind. Or, where his associates are temperance reformers and total abstainers, he forms the same views. A leading physician or a magnetic clergyman may inculcate a theory which is accepted without question, and thus form a permanent impression. A study of the literature of these partisan theories for and against alcohol reveals far more of the personality of the authors than facts of the subject. The same is true of the bitter discussions of the vice and disease of inebriety. The real scientists affirm that from the evidence so far the inebriate is diseased. The subject is in abeyance, and open for other evidence. The opponents deny positively the theory of disease, either past or present, or to come, and refuse all evidence on this point as a fact settled forever. The pseudo-scientists come in with a compromise theory of half vice, half disease, of alcohol, a half medicine and half poison, a half food and a half beverage, and with characteristic confusion, attempt to draw lines where these different states meet and join. All this literally, is a part of the early history of the subject. The vehement critics, who write so fluently and condemn so sharply, are far from being authority, or even voicing the real facts. The

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real workers on the front lines never dogmatize, never condemn, but simply ask for evidence, for facts in support of this or that theory. They demand reasons for opinions, even of experts, and refuse to accept any statements on the respectability of the author. Alcohol, its place in medicine, and its action, is simply unknown, and the voluble partisan authors who praise or condemn it, add nothing but confusion and doubt to the whole subject.

DIPSOMANIA IN FICTION.

We predicted long ago that inebriety would, some day, offer a most fascinating field for fiction writers. The childish stories of sensational temperance authors have never approached this topic, except from the most superficial moral side; then only to bring out an emotional conflict, to accord with some supposititious theory. The exaggerations and emotional fictions which, from the bases of these stories, have always repelled readers, simply because they were not in accord with the facts. Among the few writers who have recognized this fact and the new realm awaiting exploration, may be mentioned Walter Besant and his new work called "The Demoniac." This is a story of a young man in good health who suddenly awakens at night with a frenzied thirst and state of delirious nerve and brain irritation. After a time, in despair for relief, he drinks brandy; the result is so pleasing that he finally becomes intoxicated and continues for two days, then becomes disgusted and recovers. Months after a return of this nerve and brain agony comes on, and he finds relief in spirits.

He finds that his grandfather was a dipsomania, and died young from its effects. The idea that he has this disease and is fated becomes an imperative one, and ever after at intervals he gives way to this drink impulse. A regular periodicity is established, and he gives up all hope of restoration, and after an ineffectual effort to stop by a sea voyage retires to a small village and at regular intervals goes off with a ser-

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vant and drinks in disguise for two or more days. Finally he is found out and by the means of nurses is carried through one paroxysm without the use of spirits. In the next paroxysm he drowns himself rather than continue such an existence.

The story is, in many respects, true to nature. The onset of the drink paroxysm without any apparent physical conditions to provoke it, is not seen in real life. The first nerve paroxysm where alcohol is found to give perfect relief, is always traceable to some injury or illness, or exhaustion, or mental shock, and rarely comes on in a perfectly healthy person. The first use of alcohol is always as a remedy for this strange psychical and physical pain. The relief is so perfect that it is demanded again and again, without any consciousness of disease.

The hero of the story displays a neurotic diathesis in his early recognition of the disease, and his despair of mind and helpless giving way to the impulse. Had he been described as a nervous neurotic man this would have been natural, but for a strong apparently healthy man, this is a new phase. The low mental resistance and the power of a dominant thought, seen in the necessity of giving way to the drink craze at regular intervals, is very clearly brought out. The medical advice given was practical, but his skepticism, and, while apparently trying to carry it out, intriguing to produce the opposite result, was all true to life. The end, as well as the beginning, was unnatural. Dipsomaniacs rarely commit suicide during the paroxysm, but after it has passed away the melancholy and despair may lead them to this end. As an outline sketch of cases that are growing more frequent in actual life this story has much merit. Evidently the author has partially studied a veritable case and supplied from his imagination what he failed to secure in history of facts. When these cases are clearly understood and the wonderful uniformity of laws which govern their rise and development are studied, we shall have a new field of fiction far beyond the present levels of temperance stories.

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MEDICO-LEGAL QUESTIONS

Of Inebriety have received new interest in the following recent cases: William Blunt of New York city left over two million dollars to a low Irish bar maid, who claims to have been legally married to him. In the legal contest, not yet settled, the following facts were brought out:

Blunt was an iron merchant and made a large fortune by careful, steady work, and temperate living. He was a total abstainer, and a most exemplary man in every way. In July, 1889, his wife and only daughter were drowned at Far Rockaway. He suffered from nervous shock and fever and remained in bed for two months, then went to Europe with a son. He began to use wine to excess, and was intoxicated nearly every night, until he returned in the winter of 1890. He went to business again, was much changed in character and conduct. He became untruthful and suspicious of his sons, and had an expert examine his books and accounts twice in three months. He drank at home occasionally to stupor, and would go away alone for a day or more at a time, and come back more irritable and under the influence of spirits. He was seen by two experts, who pronounced him sane.

He grew thinner, and absented himself from home at short intervals, and claimed that he was visiting some iron factories in Pennsylvania.

In December, 1890, he died after a short drink paroxysm at home, and a few days later a will was offered by a low Irish girl, who claimed to be his wife. The question turned on his mental soundness. The marriage was proven and the fact of his partial intoxication at the time. Two physicians, both experts, swore that from all the facts there was no evidence of unsoundness, and that his strange conduct and alcoholic excesses was of no physical importance.

On the other side, a country physician from Vermont, who had been acquainted with him in early life, testified that he was insane and probably suffering from the first stages of

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general paresis. I fully sustained this view of the case, and believe the brain shock from the death of his wife was a psychical traumatism, and the drink craze was a symptom of the organic changes, and that inebriety was a most natural sequal, and general paresis was equally indicated.

The common-sense views of the Vermont physician was clearly more accurate and scientific than the learned specialists on the other side.

In the second case, where a conviction of murder in the first degree was found, the following were the disputed facts: Peter Noxon, a wealthy farmer, was always an irritable, nervous man, of violent temper, but soon over it. He was a very temperate, reputable man, in good health up to the summer of 1888, when he suffered from sunstroke. He became very much emaciated and was an invalid for several months. He was given alcohol by the physician as a tonic. In a short time he recovered and became a steady drinker and occasionally to great excess, in which he was maniacal and violent in his excitement. During the year of 1889 and 1890, he abused his family and near relatives and his horses and any one who came in contact with him during the drink paroxysm. He became involved in law suits, was deceitful and dishonest, and exhibited a total change of character. He drank every day and at irregular intervals to delirium and excess. In November, 1890, he killed a merchant, without the slightest provocation or warning, alleging that two weeks previously he had paid him less for some garden produce than the market price. He killed him in revenge for his fraud. Previous to the crime he drank very freely, but was not stupid or wildly delirious. The same miserable conflict of medical testimony appeared on the trial. It appeared to me that any common-sense view of this case would have sustained the theory of insanity and irresponsibility, also that from a marked neurotic ancestry this man inherited a defective and unstable brain and nervous system. The sunstroke was followed by organic changes, and inebriety was both a symptom and an exciting cause, which increased until he

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was a literal maniac. It is difficult to understand how a man in this condition, with such a history, could have a sound brain and normal control of it. Yet there were physicians who believed this to be the case, and that this man was responsible, and could have done otherwise had he willed to do so. This was clearly a case of traumatism from sunstroke, developing some form of brain disease and degeneration.

Physicians who still adhere to the theory that the vice and willfulness of inebriety can be made to apply in such cases, are unfortunately behind the advance of science. Court-room theories and law rulings on questions of this kind should be ignored by physicians. The world advances, and new facts and new truths are appearing on every hand.

WORK OF THE ENGLISH SOCIETY FOR THE STUDY OF INEBRIETY.

This society, under the presidency of Dr. Kerr, is doing most excellent work. A mere mention of what they have done for one year is a great stimulus and encouragement for our association.

In the January meeting, two papers were read, one by Dr. Crespi on the "Treatment of Inebriety"; the other, by Dr. Wright of this country, on the "Responsibility of Drunkenness." These were very intelligently discussed. The president presented a short paper on ether drinking.

At the annual meeting in April, Dr. Kerr's annual address was a very suggestive discussion "of recent civil and criminal trials with inebriate complications." This elicited a very wide and suggestive discussion. Resolutions of condolence at the death of Dr. Parrish were warmly endorsed.

At the August meeting Max de Proskowett, the president of the Austrian Inebriate Society, read a very interesting paper on Ruthenian Inebriety, with the story of the cure

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and after career of an inebriate in North Austria, after which he described the Austrian law relating to the responsibility of inebriates. This we hope to place before our readers soon. A summary of the statistics of Dalrymple Home was presented.

In the October meeting, Dr. Westcott, coroner of Central London, read a paper on alcoholic poisoning in Central London, and heart disease as a fatal result. Mr. Rowland followed with a paper on the principle of compulsion as relating to inebriety. A very instructive discussion followed, after which Dr. Kerr offered a motion that a full expression of views be solicited from societies and others in favor of compulsion of inebriates, and to urge Parliament by petition to grant this. It will be seen that these were all very practical papers by practical men, and most of them have been very widely read and discussed by both medical and lay press. We send our congratulations to this society for the grand work of the year, and shall go on with renewed confidence and pride that an ever increasing number of distinguished men are following along the same lines of research.

REST ISLAND.

This is the pleasing name of a new inebriate asylum project, the success of which will depend on the good sense and skill of the managers. A small wooded island of one hundred and sixty-seven acres of land has been purchased in Lake Pepin, Minnesota, where buildings are to be erected for the reception and treatment of inebriates. The island is over half a mile from the mainland, and this is supposed to be a strong barrier to prevent escape and make it difficult to procure spirits. An attempt will be made to furnish some profitable employment for the inmates; this with instruction and helpful amusements and perfect isolation from all possible exciting causes, will be a success if carried out practically. Assure the public that this project will be carried out on

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broad scientific principles, and that each one will be treated as sick and diseased, needing exact physical means and remedies for their cure, and also convince business men that this is a business project, not to make money but to help men who will help themselves, and the capital necessary to conduct the work will be advanced at once. Make it a faith cure or camp-meeting ground and capital will avoid it, and donations will come reluctantly and with a struggle. If the managers realize this and begin right, they can found one of the great charities of the coming century, if not, a short sickly life and early death are certain to follow.

In most cases inebriety is a self-limited disease. The drink symptom dies out naturally, or concentrates in some other form of morbid impulse. Any remedies or means used at the time of change will be credited as curative. The cessation of the drink impulse is not followed by full restoration, yet the impression prevails that total abstinence is a sign of cure always. Many pronounced paranoias and diseased persons who have abstained from alcohol, are posing as examples of cure from this or that means or remedy — persons in whom the drink impulse has died away naturally, no matter what remedy may be used. This is evident in the common class of those who sign the pledge, or profess conversion, many times only to relapse after each occasion. Finally in apparently the same circumstances, they go through the same formula, and the drink impulse disappears forever.

The real facts are that some organic brain change has taken place, the desire for alcohol ends. Other morbid symptoms may come on, but this disease has subsided or taken on new forms. The bark remedy, the mind cure, hypnotism, or any of the so-called specifics, that are followed by a cessation of a drink impulse, are all examples of this change. Physicians of asylums recognize this, and direct all their efforts to build up and bring the patient back to a normal physiological life, in expectation of the final cessation of the

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drink symptom and restoration of the organic processes. This result may come on any time, and the object of all treatment is to encourage this, and remove the conditions which seem to provoke the drink symptom.

Drugs or restraint which holds the drink symptom in abeyance are never curative, and when followed by a subsidence of this impulse, it is an accidental conjunction of the natural dying away or change of brain function and growth. When such change occurs after long treatment in the best physiological and hygienic conditions, it is reasonable to suppose that these means have contributed more or less to this end. But when this subsidence follows in conditions opposed to this, and from means inadequate to change or alter organic action, clearly some other forces are at work.

The self-limitation of inebriety, and the natural history and progress of the disease are yet to be written.

It is a mournful sight to see eminent men off the track of scientific progress. Particularly, when they unconsciously open the switch, and start down the side track, in full confidence that they are on the main line. Many years ago, Dr. Bucknil of London, asserted that inebriety was a vice, and the American defenders of this view were both ignorant and unfair. In a bitter controversy some excuse might have been made for such a statement, but to-day the reiteration of such views is a sad indication of a wide separation from the main line of scientific advance. Clearly he is side-tracked and slowing-up on the down grade. The old warrior of long ago has fallen back far to the rear, yet he still thinks the battle is going on about him ; he still hears the same roar, sees the same enemy, uses the same weapons, and thinks the same line of advance is followed. The night is coming on, and somewhere in the other world we trust Dr. Bucknil will have a clearer vision and see the truth from a higher standpoint.

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Clinical Notes and Comments.

INEBRIETY AND CRIME.— In a paper on "Instinctive Criminality," read by Dr. S. A. K. Strahan before the Anthropological Section of the British Association, he quoted some startling statistics bearing on drunkenness as a fruitful agent of crime. Dr. Strahan maintains that what he calls the instinctive criminal, who is better known as a habitual criminal, can no more check the actions of his vicious organization than can the epileptic or the insane, and that instead of being punished with rigorous severity, he ought rather to be treated humanely and with a view to his ultimate reformation. His remarks on the subject of drunkenness, however, are deserving of attention, especially by those responsible for the licensing of public houses. "Carefully drawn statistics of 4,000 criminals who have passed through the Elmira Reformatory, New York, show drunkenness clearly existing in the parents of 38.7 per cent., and probably 11.1 per cent. more. Out of seventy-two criminals whose ancestry Rossi was able to trace, in twenty the father was a drunkard and in eleven the mother. Mano found that on an average 41 per cent. of the criminals he examined had a drunken parent, as against 16 per cent. of normal persons. Dr. Laurent, in his recent valuable work on the habitues of the Paris prisons, asserts that drunkenness as combined with some other neurotic condition is to be found almost constantly in the parents of criminals."

THE prevention of alcoholism is a physiological life. The cure of alcoholism is a return to a physiological life. The ways by which either the prevention or cure of alcoholism are to be attained, are as multiform as the individuals involved and the varieties of human existence. At another time we have called attention to the part that good food, well

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cooked, so as to be easily digested, plays in the prevention or cure of this disorder. We know of no such potent means for preventing alcoholism as the presence upon every table, at every meal, of such food. Labors toward this end should be encouraged by all who desire to see alcoholism wiped out of the community. Another means of preventing alcoholism is the avoidance of exhaustion. The overworked literary, scientific, or business individual must get rid of worry and fatigue, as he feels that he must continue the race though he knows the penalty. A hopeful outlook for the future is the greater attention given to this matter. It is needful to urge the laborer to avoid exertion beyond his strength, and thus avoid the nervous exhaustion that entices to the consumption of alcohol, etc. We have no faith in any specific for drunkenness.— *Dr. Connor in Lancet.*

HEREDITY.

Now if it be true, that through impressions made upon the embryo or fœtus through the maternal mind, results in all manner of physical monstrosities; yea, more, if it be true that not only physical deformities may result from arrest of development or mental shock, but that even organs already formed may be disintegrated, through powerful mental impressions made through the maternal mind; and if so much of the physical depend upon this cause, how much more of the mental make-up may depend upon this? How many criminals may attribute their criminal tendencies to this source? How many murderers, when upon the scaffold, in place of attributing their downfall to evil habits and evil associations, might not truthfully attribute their disposition to commit murder to some secret desire of the mother to commit murder, stamping the fatal impress upon her unfortunate offspring; or, perchance, he might truthfully attribute his murderous appetite to the practice enforced upon the majority of rural housewives, of murdering the domestic fowl. Or again, how many of our boys and girls owe their

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desire for strong drink or artificial stimulation to the sudden appetite that often springs up with the soon-to-be mother, for strong drink? Or again, how many of our thieves owe their peculiar tendency to purloin to some sudden desire to purloin that overtakes the mother during her gestation? You will remember that the act actually perpetrated by the mother would not impress the child in utero so much as would the mental desire. So with many other peculiar traits of character.— DR. STRANGHAN.

INCOMPETENT PRACTITIONERS.— The Secretary of the State Board of Health of Iowa has publicly declared his conviction that habitual drunkenness constitutes "palpable evidence of incompetency," under the law, and therefore, that he should be deprived of the privilege of practicing his profession and his diploma be revoked. This declaration assumes high ground; and yet it will obtain the hearty approval of the profession at large, and of the people. A physician gifted with the highest attainments, even in their highest exercise, totally uninfluenced by all extraneous causes, is in a condition none too complete for the faithful discharge of his responsible duties, at the bedside of the sick or of the sufferers from injury.

If a physician, therefore, is so far oblivious to the duties and obligation which he owes to himself as such, to say nothing of his relations to his family, as to deliberately and habitually disqualify himself by the use of any intoxicating agent, he cannot act with wisdom and due discrimination; consequently, his power and privilege to practice in any and every instance should be taken from him. He has violated the unwritten contract to render to his patient his services in the most approved manner recognized by the profession. He becomes a dangerous man; his abilities for injury to his patient are vastly increased by reason of his knowledge, which may be grossly perverted and fatal results follow. He should, therefore, be deprived of legal power to do harm in any in-

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stance. Georgia, by recent act of the legislature, declares that when a doctor is convicted of drunkenness he can no longer practice medicine in that State.

INEBRIETY, as a disease, is more seriously affecting the moral and civil affairs of state than any other that will come under the notice of the practitioner of medicine. Excepting the poison of syphilis there is none other so productive of far-reaching morbid processes and capable of affecting all the tissues of the body as alcohol. The results either of moderate drinking or chronic alcoholism will extend to generations to come and show in crime, drunkenness, or nervous disorders. Inebriety and its attendant maladies are conditions of progressive degeneration. And while one may stand surprised when he starts out to trace up the history of a patient and finds that it can be followed back to a drinking father or mother, yet it is better for the physician and patient, for the former will know what is required of him, and the latter will recognize the ability that may alleviate his trouble. But practically there is no limit to the possibilities of convincing information on this subject, and the more it is studied the less is there to be said in favor of the use of alcohol in any form.— *Dr. Reeder in Lancet-Clinic.*

TUBERCULAR LESIONS IN ALCOHOLISM.— In thirty cases in which phthisis was present, a dense fibroid pigmented change was almost invariably present in some portion of the lung far more frequently than in other cases of phthisis, gray or yellow tubercles were less common, and caseous broncho-pneumonia was quite the exception. The prevalence of these fibroid, and to a certain extent reparative, changes, appears to be associated with the taking of a large amount of alcohol. *Prima facie* the chronic dyspepsia, and irregular habits, the lack of food and the gross improvidence and recklessness of these patients who lead us to expect that their

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mortality from phthisis would be high. The Registrar-General's reports, however, show that the mortality from phthisis of publicans and others whose occupations expose them to special temptations to drink is rather below than above the average. But acute tuberculosis and pneumonia are very liable to occur in such patients, and the tubercular nature of the disease may often be overlooked during life. It is noteworthy that about three-fourths of the cases of alcoholic neuritis and about a fifth of those alcoholic cirrhoses of the liver are found, *post mortem*, to have also tubercular lesions. The association of such lesions with cirrhosis is seldom insisted upon, but is of importance. Out of 110 cases of alcoholic cirrhosis, in 23 there were tubercular lesions, phthisis most commonly, but in some acute tuberculosis or tubercular peritonitis. Dr. Pitt's conclusions were that tubercular lesions in the lung in alcoholic subjects generally take a fibroid form, and that tubercular lesions are not frequently associated with alcoholic neuritis and hepatic cirrhosis.— *Med. Press, and Epitome of Medicine.*

A CONGRESS of superintendents of lunatic hospitals at Weimar has passed a resolution approving of the bill for the repression of drunkenness. The clauses making confirmed drunkenness a punishable offense were, however, disapproved of. Persons thus afflicted, it was recommended, should be treated as diseased, and, as such, placed in proper asylums.

INEBRIETY is curable in nearly all cases in the early stages. After repeated poisoning or intoxications for years, conditions of degenerations come on, from which recovery is very rare. The drink impulse may die out, or be permanently checked, but the injury to the brain and nervous system remains.

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EUROPHEN.

This new antiseptic medicament designed to replace iodoform is obtained by the action of iodine upon isobutylorthocresol. Its pharmacology and bacterialogy have been studied by Siebel, and its therapeutic action by Eichhoff.

Europhen is an amphorus yellow powder, exhaling a slight odor resembling that of saffron. It is insoluble in water and in glycerine, and more soluble than iodoform in alcohol, ether, chloroform, and the oils. Europhen adheres better than iodoform to the skin and to open wounds, and an equal quantity of it by weight will cover a surface five times greater.

This iodide of isobutylorthocresol is not toxic. Dogs were found to take two to three grammes of it with impunity, and the human organism will bear one gramme of it without unpleasant phenomena, save a slight feeling of weight in the stomach.

The urine of patients who had absorbed Europhen did not contain iodine.

Eichhoff employed it successfully in dressing both hard and soft chancres. He used it as a powder and also in the form of a one per cent. or two per cent. ointment. He furthermore employed it successfully in hypodermic injections, for syphilitic patients suffering from the secondary and tertiary symptoms of syphilis. These injections consisted of one gramme of Europhen to one hundred grammes of olive oil, and of this, one-half to one cubic centimeter was injected daily in one dose. Eichhoff employed Europhen in varicose ulcer and ulcerative lupus, as well as in eczema, psoriasis, and favus, in all of which it proved to be efficacious.

Ointments containing one per cent. to two per cent. Europhen are as strong as need be used. Five per cent. ointments caused a certain amount of irritation. — *La Semaine Medicale*, July 29, 1891 ; *Repertoire de pharmacie*, Aug. 10, 1891.

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Dreamless Sleep.—About eighteen months ago a friend of mine from America told me of the wonderful effects of a medicine, much used in the States, called Bromidia, which is a combination of chloral, bromide, potass, cannabis indica, and hyoscyamus. I obtained some, and have ordered it regularly for over a year; and have found it excellent in the pain of rheumatism, pneumonia, and cancer; also in the sleeplessness of scarlatina and alcoholism. It has never failed me in procuring sleep, without the disagreeable dreams and after effects of opium. The dose is 3ss, to 3j. every hour till sleep is procured. I have also found it of much service in cases of tonsilitis, used as a gargle with glycerine and carbolic acid. — *Extract from recent article in Edinburgh Med. Journal*, by *J. Lindsay Porteous, M.D, F.R.C.S., ed.* [BATTLE & Co., Chemists' Corporation, St. Louis, Mo., U. S. A.]

A letter addressed to the *Antikamnia Chemical Co.* by Dr. Eggers appeared in the July Number, with some sentences cut out which materially changed the spirit of the author. We regret this, but take pleasure in saying that *antikamnia* is an excellent succedaneum for *morphia*, and put up in tablets of five grains each is most available. We should most sincerely urge its trial in the alcoholic and opium cases as a safe and agreeable narcotic. Send to this company for a package, and try it.

Cerebral Sedative, compound of Parke, Davis & Co., has been on the market for years. In a long experience we have found this an exceeding practical medicine that is unrivaled.

Lactopeptine has become a fixed remedy for gastric derangements, and is not rivaled by any other drug in the market.

Fellows' Hypophosphites is prescribed regularly as a tonic of rare power and value.

The Georgia *Lithia Water* of Bowdin springs is attracting great attention, and rapidly becoming the great medicinal water of the Southern country.

Hosford's Acid Phosphate is an old standard remedy that has passed into the realm of the essentials for the practice of the healing art.

The *Dias Chemical Co.* have brought out a most valuable remedy called Neurosine. As a hypnotic it has become very popular.

Warner's Bromo-Potassa needs no special mention. Whenever it is used once it becomes a favorite remedy.

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THE THIRTY-SEVENTH REGULAR PUBLIC COURSE OF LECTURES IN THE MEDICAL DEPARTMENT OF THE

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The lectures on special subjects, by gentlemen recognized as authorities in their particular departments, will be delivered during the regular session without extra fee.

NEW COLLEGE BUILDING.

Owing to the generosity of Mr. John P. Howard of Burlington, Vt., a new college building has been erected, with all modern improvements, capable of seating about four hundred students.

HOSPITAL ADVANTAGES.

The Mary Fletcher Hospital, with its commodious amphitheatre, is open for Clinical Instruction during the session. The Medical and Surgical Clinics of the College will be held in the amphitheatre attached to the hospital.

The Preliminary Term, consisting of a Course of Lectures and Recitations in the various branches of Medicine and Surgery, will begin on the first Thursday of November, 1889, and continue until March 1, 1890. Fee, $30.00.

The Regular Winter Session will commence on the last Thursday of February, 1889, and continue twenty weeks. This course will consist of from five to six lectures daily, in the various departments of Medicine and Surgery.

FEES FOR THE REGULAR SESSION.

Matriculation Fee, payable each term, $5.00. Fees for the Full Course of Lectures by all the Professors, $75.00. Perpetual Ticket, $125.00. Examination Fee, not returnable, $25.00.

Students who have already attended two full courses of lectures in other regular schools are admitted on paying the matriculation fee, and $40.00.

Students who have attended one full course in some regular established medical school, and one full course in this college, are admitted to a third course on paying the matriculation fee and $25.00.

Graduates of this school are admitted without fee. Graduates of other regular schools and Theological Students are admitted by paying the matriculation fee.

For further particulars and circulars, address the Dean,

Prof. A. P. GRINNELL, M.D., Burlington, Vt.

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